plura®

broadcast

Operating Instructions

PBM-S Series Monitors

PBM-232S

PBM-224S

PBM-S Series

PBM-217S

PBM-317S

PBM-219S

PBM-220S

PBM-221S

PBM-224S

PBM-232S

PBM-240S

PBM-246S

PBM-255S

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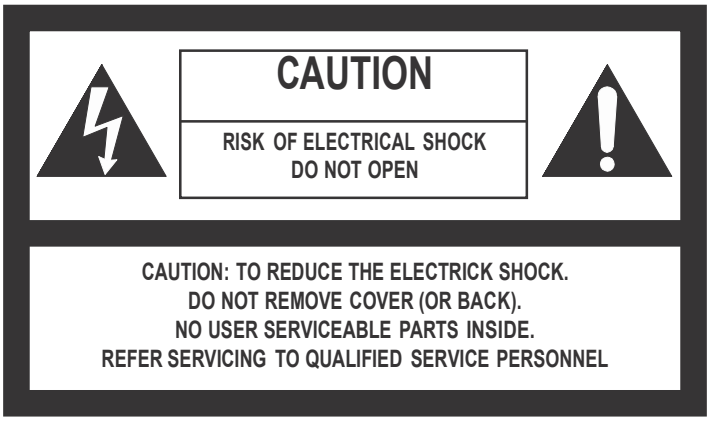
BefORe OPeRAtING the Set, PleASe ReAd thIS MANuAl CAREfully.



the lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

the exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

to reduce the risk of electric shock does not remove cover (or back). no user serviceable parts inside. refer servicing to qualified service personnel. to prevent fire or shock hazard, do not expose the rear of the set to rain or moisture. Do not rub or strike the active Matrix LcD with anything hard as this may scratch, mark, or damage the active Matrix LcD permanently.

CAutION:

unauthorized tampering with the inside of the monitor invalidates the warranty.

the manufacturer shall not warrant for any damage caused by improper maintenance and/or repair work by third parties.

important safeguards for you and your new product:

your product has been manufactured and tested with your safety in mind. However, improper use can result in potential electrical shock or fire hazards. to avoid defeating the safeguards that have been built into your new product, please read and observe the following safety points when installing and using your new product and save them for future reference.

1. **Read Instructions**
2. **follow Instructions**
   all operating and use instructions should be followed.
3. **Retain Instructions**
   the safety and operating instructions should be retained for future reference.
4. **heed Warnings**
   all warnings on the product and in the operating instructions should be adhered to.
5. **Cleaning**
   Disconnect the unit from the electricity supply before cleaning. Do not use abrasive cleaners. use a damp cloth for cleaning.
6. **Water and Moisture**
   Do not use this apparatus near water.
7. **transporting Product**
   a product and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the product and cart combination to overturn.
8. **Attachments**
   Do not use attachments not recommended by Plura Broadcast inc. as they may cause hazards.
9. **Ventilation**
   Do not block any of the ventilation openings.
   install in accordance with the manufacturer's instructions.
10. **Power Sources**
    this product should be operated only from the type of power source indicated on the marking label. if you are not sure of the type of power supply to your home, consult your supplying dealer.

11. **Power lead Polarization**
this product is equipped with a three-wire grounding-type cord. this is a safety feature. Do not defeat the safety purpose of the grounding-type cord.

12. **Power Cord Protection**
Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles and the point where they exit from the product.

13. **Outdoor Cable Grounding**
if an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. a "face plate" also needs to be installed with an isolating capacitor to prevent any damage from static.

14. **lightning**
for added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. this will prevent possible damage to the product due to lightning and power-line surges.

15. **Power lines**
an outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to avoid contact with such power lines or circuits, as contact with them might be fatal.

16. **earthing the product**
this product must be earthed properly to comply with the safety regulations in the country of use. if you are unsure of these regulations, please consult a qualified electrician.

17. **Servicing**
Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages or other hazards. refer all servicing to qualified service personnel. if the Set does not operate properly, switch it off and call your dealer.

18. **damage Requiring Service**
isolate this product from the mains supply and refer servicing to qualified service personnel under the following conditions:

    a. if the power-supply cord or plug is damaged.

    B. if the glass front has been damaged.

    c. if there is ingress of water between the glass and the LcD screen.

    D. if the product does not operate normally by following the operating instructions. adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.

    e. if the product has been dropped or the cabinet has been damaged.

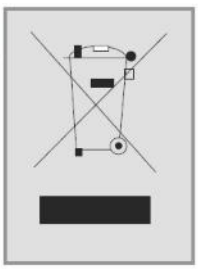
    f. if the product exhibits a distinct change in performance.

19. **Safety Check**
upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition and the front seal is intact.

20. **Mounting**
the product should be mounted on a wall only as recommended in the instructions.

21. **Power**
this set operates on an ac supply; the voltage is as indicated on the label on the Manual. this appliance must be earthed at all times through the chassis as well as through the power lead.

Note



This product is designed and manufactured with high quality materials and components which can be recycled and reused.
This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste.
Please, dispose of this equipment at your local community waste collection/recycling centre.
In the European Union there are separate collection systems for used electrical and electronic product.
Please, help us to conserve the environment we live in!

1. Overview

The new PBM-S Plura Precision Broadcast LCD Series which is built with Grade A LCD Panel that supports multi format inputs, Powerful Dual 1.485Gb/s input display with advanced Waveform / Vector scope, Closed Caption or Teletext 801 & subtitle for North American or Australian markets respectively, VPID, IMD and many more . . .

2. General Features

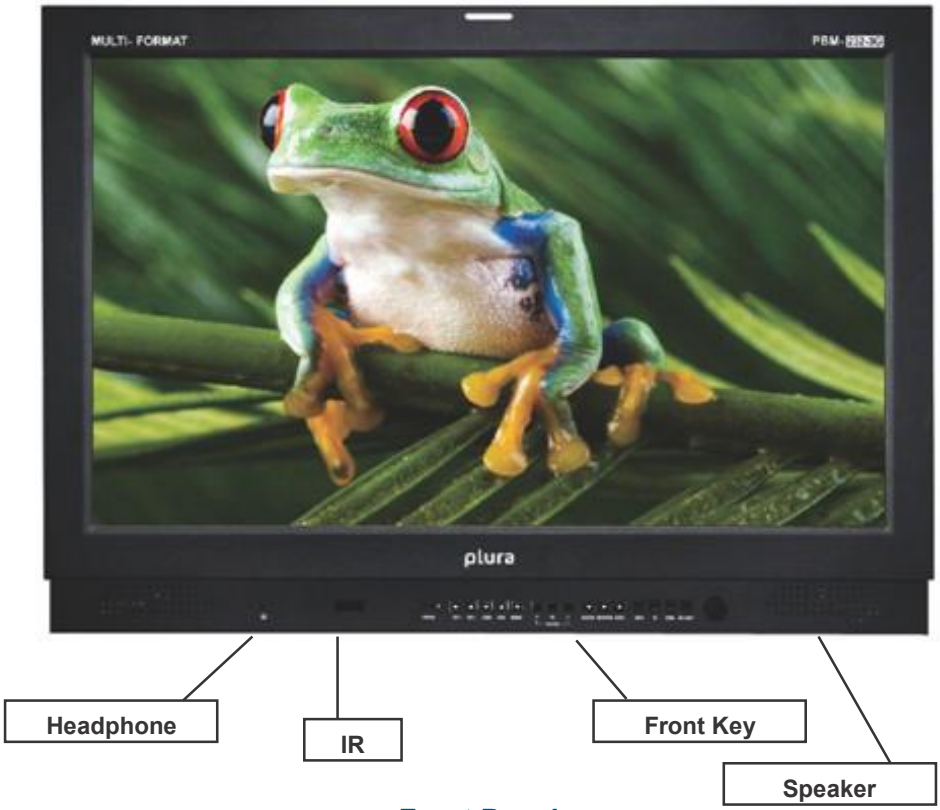
- 2 x Auto-detect HD-SDI, SDI with active loops (1.485Gb/s / 270Mb/s)
- Dual HD SDI YPbPr 4:2:2 – Dual HD SDI YPbPr/RGB 4:4:4 & 2K
- RGB, YUV, Y/C, Composite, UXGA, DVI & HDMI (DHCP)
- Complies with EBU-3320 TECH, SMPTE-C and ITU-R BT.709 Standards
- (ICAC) - Plura Intelligent Connection for Alignment & Calibration
- Closed Caption (608/708) – North American Market
- Teletext 801 & Subtitle OP-47 – Australia & NZ Market
- Cutting edge De-interlacing and Scaling Technology
- Fast Response Time for high motion video
- RGB 10 Bit Digital Signal Processing
- 178° Viewing Angle Display
- Internal Monitor Display (IMD)
- Underscan / Overscan / Normal / Zoom
- Pixel to Pixel Mode, Tally, DC Operation
- Display LTC & DVITC time code with line select
- Internal Pattern Generator and Wall Control System
- Built In Stereo Speaker, 16 CH Audio Metering Display
- Analog & Embedded Audio Input, Digital Audio Decoding
- Color Temperature – User, VAR, Adjustable (11000K TO 3200K)
- Various and User defined Markers Display, Safe Area in HD & SD
- Picture and Picture (PaP), Picture in Picture (PiP) display / Blend
- Intuitive OSD Display, Graphic based, 6 Languages (UNICODE System)
- Display Advanced Waveform & Vector Scope simultaneously with line select
- Programmable 3 User Front Pushbutton Controls, GPI & RS232 Remote Control
- OPTIONS: Battery Mount: PBM-AB (Anton Bauer), PBM-VM (V-Mount), Hard Carry Case, Rack mount & Soft Carry case

3. Functional Explanation of Each Part

3-1. Front Panel

Front Panel

PBM-217S, PBM-220S & PBM-224S

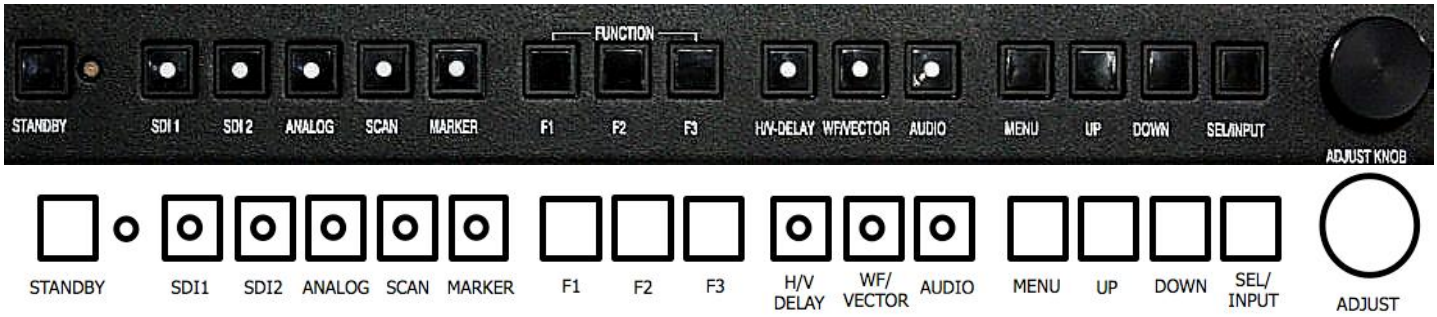


Front Panel

PBM-232S, PBM240S, PBM-246S & PBM-255S

1. Overview

3-2. Front Key Arrangements



3-3. Front Key Operations

Key Name	Operation
StanDBy	Power on/off Button. this button is operated after being pressed about 3 seconds.
SeL/inPut	activates oSD menu of input source selecting. changes input source. executes functions (by oSD help commands) in main oSD menu.
DoWn	Decreases audio volume of speaker. Decreases values of user menu in main oSD menu. executes function (by oSD help commands) in main oSD menu.
uP	increases audio volume of speaker. increases values of user menu in main oSD menu. executes function (by oSD help commands) in main oSD menu.
Menu	activates main oSD menu. navigates higher menu in main oSD menu. Stops auto frequency searching. exits oSD menu.
auDio	activates audio Lever Meter
Wf/Vector	activates WaVrforM & Vector Scope (SDi only) Setup Menu Waveform format selection
BuLe onLy	Mono color/BuLe onLy selection
H/V-DeLay	activates 'H & V' blanking display 'H DeLay' -> 'V DeLay -> 'HV DeLay' -> off
function 1	executes functions of user selected
function 2	unDef, aspect, Mono/Blue only, audio channel, Safety area marker, time code, analog caption, audio mute, Still image, Zoom, flip, Gamma select, PiP func & input, Sub win
function 3	Sub win part
MarKer	Draw Marker on Screen (off -> 16:9 -> 4:3 … -> 2.35:1)
Scan	executes Scan function (over-Scan -> Zero-Scan -> under Scan-> Pixel to Pixel)
SDi 1	Select SDi 1 source
SDi 2	Select SDi 2 source
anaLoG	Select anaLoG source directly ('composite1' ->'composite2' ->'composite3' -> 'S-video' -> 'G.B.r' -> 'y.Pb.Pr' -> 'Pc' -> 'HDMi' -> 'DVi'
aDJuSt	adjust Video Menu(Brightness -> contrast -> color -> Sharpness->Phase & tint) turn right = 'uP' button turn Left = 'DoWn' button

3-4. Front Panel led Operations

- Green Led turned on during execution of key function and Power on
- Stand-by mode is LED Red

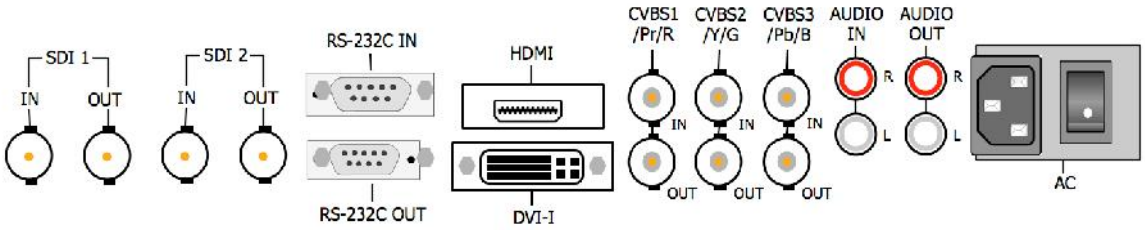
Speaker Out

Speaker r out	8 ohm±15%, Max 2W + 2W
Speaker L out	

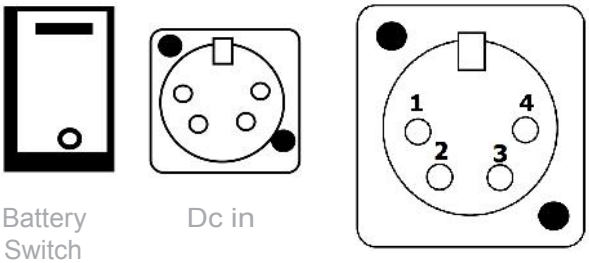
3-5. Rear Panel

Rear Panel

3-6. Connection details



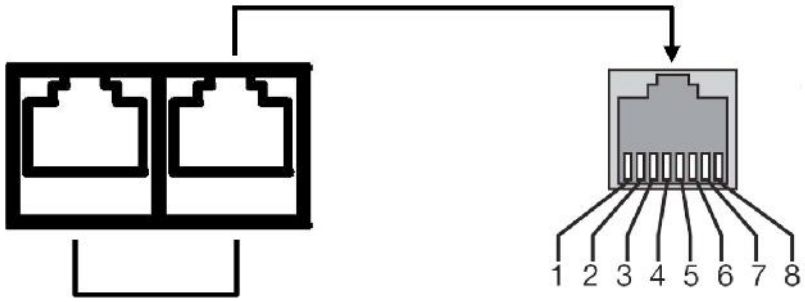
3-7. dC 12V Battery IN PBM-217 -»12V, PBM-224 -»24V



Battery Switch

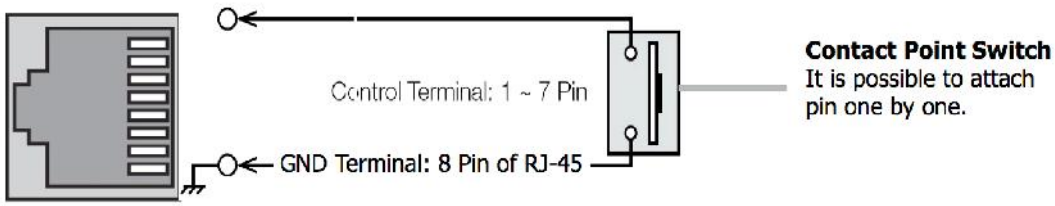
Dc in

PIN No.	description
1	GnD
2, 3	
4	+ 12V/24V



3-8. Remote PIN Assignment

1 Pin	coMMon(GnD)	5 Pin	GPi 4 Port
2 Pin	GPi 7 Port (StanD By/PoWer on/off)	6 Pin	GPi 3 Port
3 Pin	GPi 6 Port	7 Pin	GPi 2 Port
4 Pin	GPi 5 Port	8 Pin	GPi 1 Port



3-9. Interface description

Interface	description
SDi 1 in SDi 2 in	HD SDi / SD SDi input
SDi 1 out SDi 2 out	SDi 1, SDi 2 Loop out
rS-232 in	update/Multi control/auto color calibration
rS-232 out	Multi control out
HDMi	High Definition Multimedia input
DVi-i	DVi-i type Digital / analog Pc-rGB Video input High Definition Multimedia input compatible
cVBS1/Pr/G in cVBS2/y/r in cVBS3/Pb/B in	GBr (SoG sync) input y, Pb, Pr component Video input cVBS / composite input
cVBS1/Pr/G out cVBS2/y/r out cVBS3/Pb/B out	component/GBr/composite1,2,3/ S-Video Loop out
auDio r in auDio L in	DVi-i/component/GBr/composite1,2,3/S-Video audio input
auDio r out auDio L out	auDio Monitor out
ac in	ac90V ~ 240V, 50Hz/60Hz
Dc in	PBM-217: Dc 11V ~ 17V ,PBM-224: Dc 24V
uPDate	firmware upgrade
GPi	GPi 1 ~ 7 control Port

4. Menu Overview

in this menu system, there are several ways to customize the menu settings provided.

Most menus consist of three levels to set up the options, but some require greater depth for the variety of settings. if you press the MENU button, only the first and second level of the menu system will appear on the monitor screen. the third level can be displayed by pressing SEL/INPUT. if a menu has more than three levels, the pop-up dialogue box will be displayed as the fourth or fifth level.

4-1. to show and hide the Menu

Press the Menu button to display the menu. a second press of the Menu button will take you back to monitor viewing.

4-2. to go to the next level

Press SeL/inPut button.

4-3. to go back to the previous level

Press Menu button

4-4. typical Menu Operation

1. Press Menu button: the main menu will appear.
2. use uP/DoWn button to select the desired menu option (icon).
3. While the desired menu option is selected, press SeL/inPut to move to the second level.
4. use uP/DoWn button to select the second menu option.
5. Press SeL/inPut to move to the third level: Some menu options require additional steps.
6. Press Menu to return to the previous menu until you don't see the Menu any longer.

5. Basic Operation

5-1. turning On the Monitor

1. first, connect power cord correctly. at this moment, the monitor switches to standby or power on mode. in standby mode, in order to turn monitor on, press the St-By button for at least 3 seconds.

2. Select the source by using SeL/inPut button on Keypad in front of monitor

5-2. Volume Adjustment

1. Press the adjust knob and turn the dial left or right or use the uP/DoWn button on Keypad.
2. if you want to switch the audio off, press the function (audio mute) or press DoWn button or turn knob left until the volume bar displays zero.
3. you can cancel this function by pressing the function (audio mute) or volume control button.

5-3. On Screen Menu language Selection

- SetuP -> advanced -> oSD -> Language

- the menu can be shown on the screen in the selected language.

- Supported Languages: english, Spanish, Portuguese, German, french, italian

6. ON SCReeN MeNu SeleCtION ANd AdJuStMeNt

6-1. how to adjust the OSd screen

1. Press the Menu button and then uP/DoWn button to select each menu.
2. Press the SeL/inPut button and then use uP/DoWn (SeL/inPut)/Menu button to display the available menus.

(your monitor's OSd (On Screen display) may differ slightly from what is shown in this manual.)

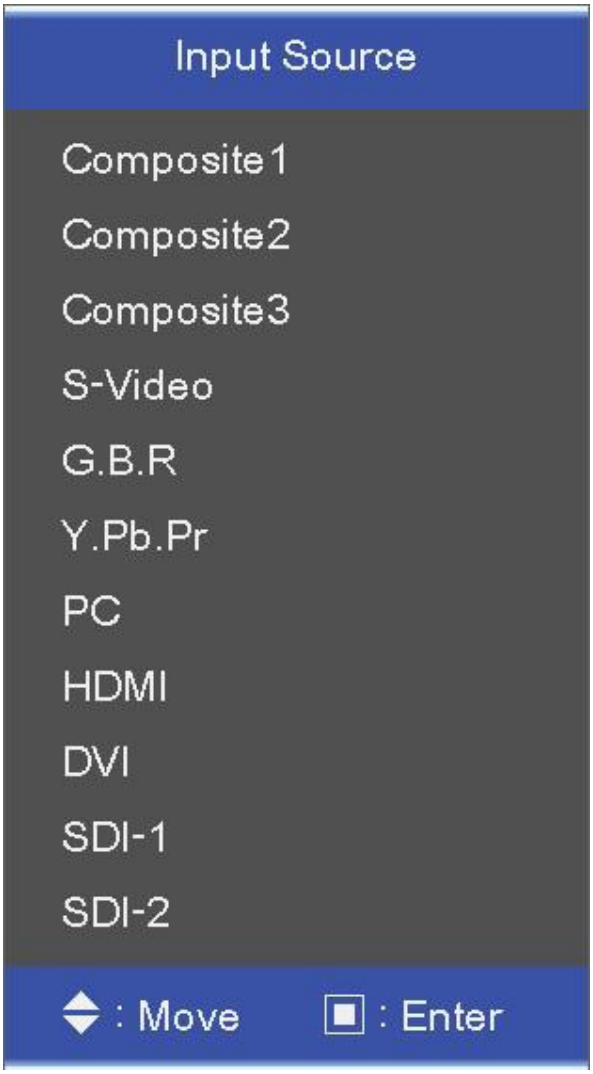
7. Select Video Input

7-1. how to Select Video Source by OSd

1. Press the SeL/inPut button and then uP/DoWn button to select each video source.

2. Press the SeL/inPut button to go to desired video source.

3. if input name is enabled, the SeL/inPut button goes into input name edit mode instead of selecting source.



8. Video Menu Options

8-1. Video Menu of each Input modes

< Video (ntSc) Picture menu>

< Pc Picture menu>

< SDi, HDMi Picture menu>

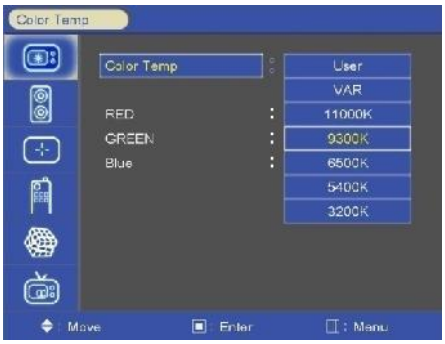
8-2. Adjust

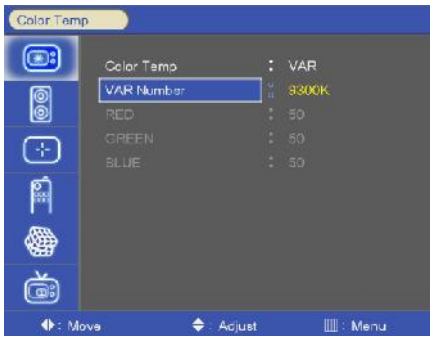
-adjust the values of Brightness, contrast, color, tint and Sharpness directly from -50 to 50

contrast, Brightness, Sharpness, color (all Sources), tint
Pc, DVi, HDMi, component) n/a, Phase (component) n/a.

(

8-3. Color temperature Control





- for Setting the color temperature or adjusting rGB gain value directly

- user (user Setting rGB gain value), Var(3200K ~ 11000K), often used value(11000K, 9300K, 6500K, 5400K,3200K)

8-4. Scan

1. over Scan – 95% input size and fit the selected display size

2. Zero Scan – 100% input size and fit the selected display size

3. under Scan – 105% input size and fit the selected display size

3. Pixel to Pixel – Display size is an input size. if input resolution is bigger than panel size, fit the panel size, example show below

8-4. Scan continued

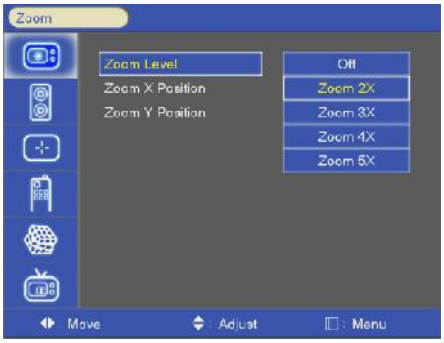
Input: 1080i

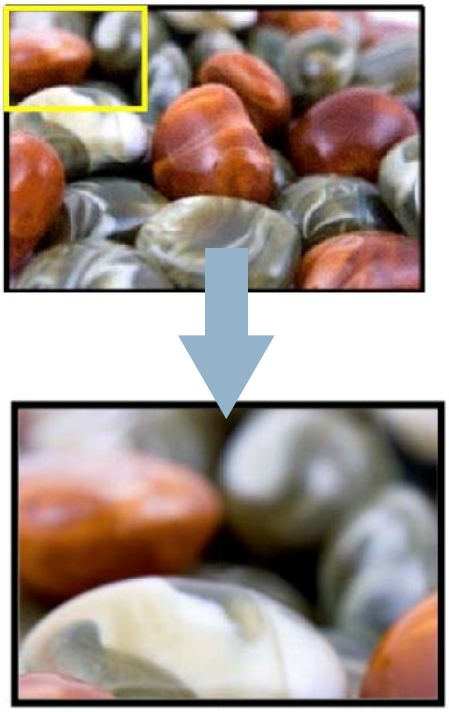
Panel Resolution: 1366x768

8-5. Aspect Ratio

- for Setting the aspect ratio.
- full Screen: the images are displayed with a panel size.
- full Screen, 16:9, 4:3, 14:9, 13:9, 1.85:1, 2.35:1: the images are displayed with each aspect ratio.
- Pc mode: full Screen & 4:3 only

8-6. Zoom





- can see the enlarged video by (2X, 3X, 4X, 5X) ratios.

- if user select the Zoom 2X, can see the below yellow box in picture.

- Press Select or enter button, user can see the enlarged picture.

- Menu key or exit key escape the zoom mode.

- example (3X3)

Zoom X position: coordinate of video image's column position.

Zoom y position: coordinate of video image's row position.

8-7. Mono/Blue Only

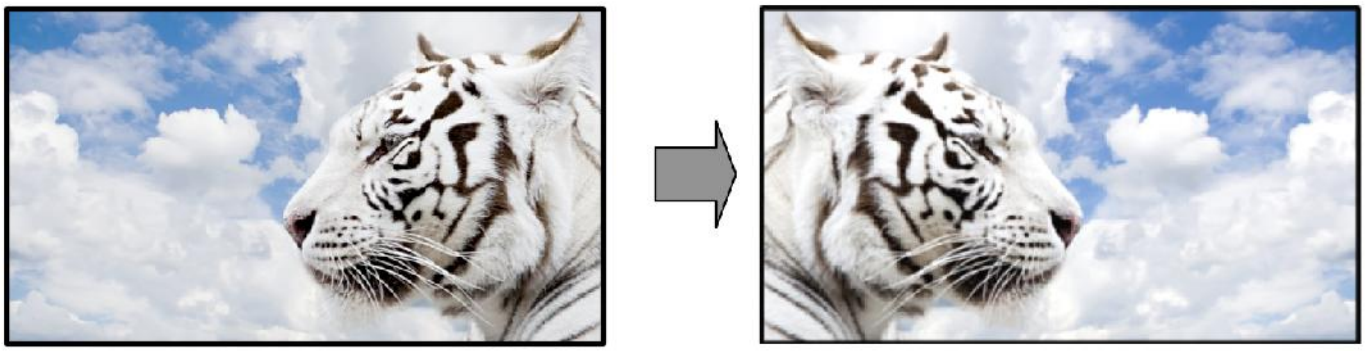
- Mono color: for selecting monochrome images.

- Blue only: images in blue color

8-8. PC Menu (pc mode only)

- only operate Pc input mode
- Select auto-adjust and adjust Phase, HV position, frequency
- auto-adjust automatically set the optimum values of Phase, HV position and frequency.

8-9. flip



< H-flip off >

< H-flip on >

-H-flip Display on/off

8-10. NR (Noise Reduction)

-noise reduction on/off. (SDi mode only)

8-11. dual link Mode (Sdl Only)

-Dual Link Mode select. (auto/off/rGB444/ycbcr444/ycbcr422)

- if SDi signal has a video payload identification and Dual Link Mode set auto mode. Dual link is set automatically.

9. Audio Menu Options

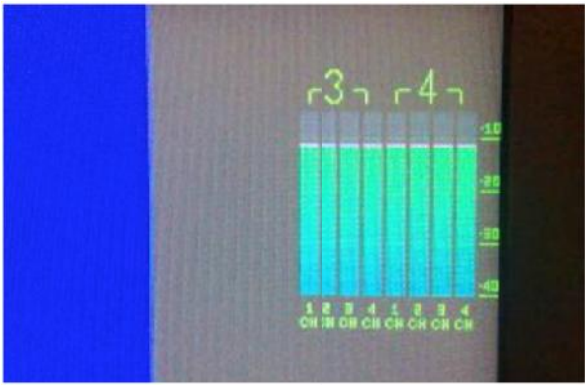
9-1. SdI 1/ SdI 2 Audio Group

- Select primary or secondary audio group to extract. (Group 1~4)

9-2. SdI 1/ SdI 2 Audio Output Channel

- audio output channel source select.
  (channel1~4, channel1/2, channel3/4, off)

9-3. level Meter



- Display the audio level meter on screen in SDi input.

- audio level meter cannot be displayed with oSD.

- SDi input can support 16 cH embedded audio, other inputs can only support 2 cH audio

9-4. level Meter type

-Pair: respectively channel with right and left display

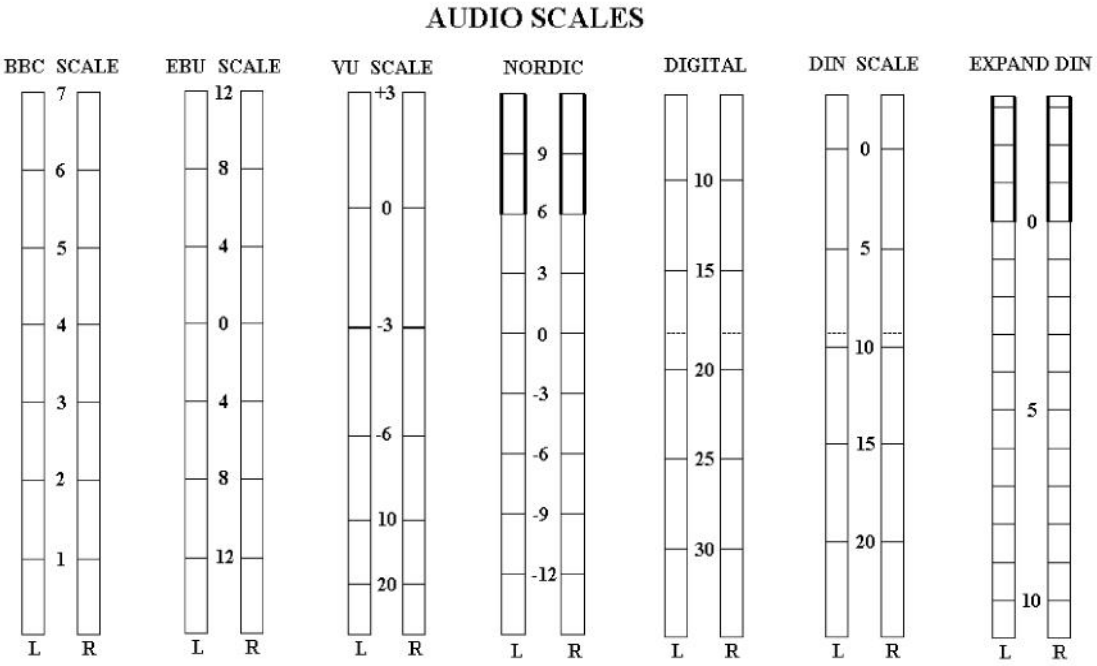
-Group: respectively group display

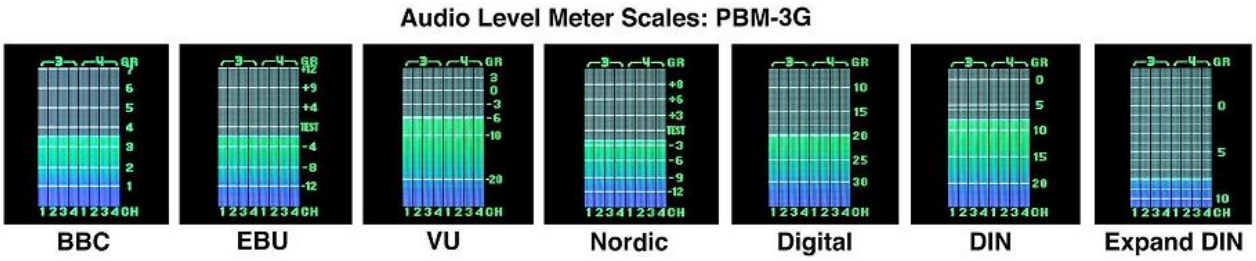
9-5. level Meter Position

- Level Meter Position selects. (toP/Middle/Bottom)

9-6. Level Meter Scale

- Level Meter Scale mode selects. (BBc / eBu / Vu / norDic / DiGitaL / Din / eXPanD Din)

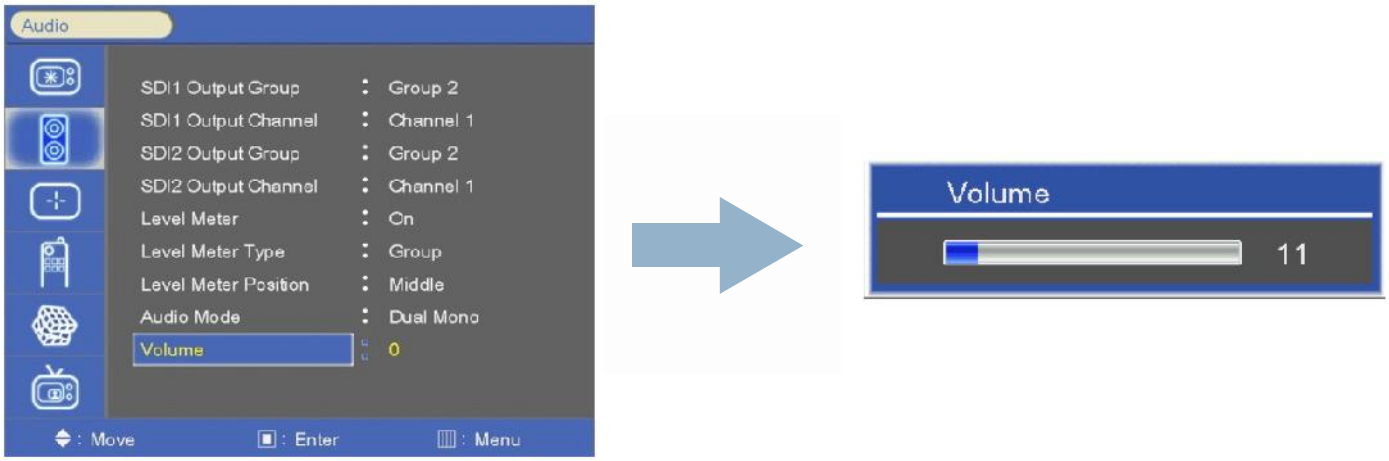




9-7. Audio Mode

- Sound mode selects (Stereo/Dual Mono)

9-8. Volume


Audio
SDI1 Output Group : Group 2
SDI1 Output Channel : Channel 1
SDI2 Output Group : Group 2
SDI2 Output Channel : Channel 1
Level Meter : On
Level Meter Type : Group
Level Meter Position : Middle
Audio Mode : Dual Mono
Volume : 0
: Move
: Enter
: Menu
Volume
11

10. Marker Menu Options

10-1. Marker & user Marker

< Marker >

< user Marker >

1. Marker : 16:9, 4:3, 14:9, 13:9, 1.85:1, 2.35:1, 1.85:1&4:3, user1, user2, user3 fitted panel size marker on screen.

2. user Marker: the user can set the different Marker size Settings. (Below panel size)

example (1440x900 panel)

16:9 (16:9 Marker)

16:9 (4:3 Marker)

10-2. Safety Area

-Safety area: Draw dotted line Marker on screen in case of images.
(16:9 95/93/90/88/80%, 4:3 95/93/90/88/80%,
eBu action 16:9/14:9/4:3, eBu Graphic 16:9/14:9/4:3)

10-3. Center Maker

- “+” Marker on center of screen

10-4. Marker Width

-Marker line thickness setting. (0~10)

10-5. Marker Color

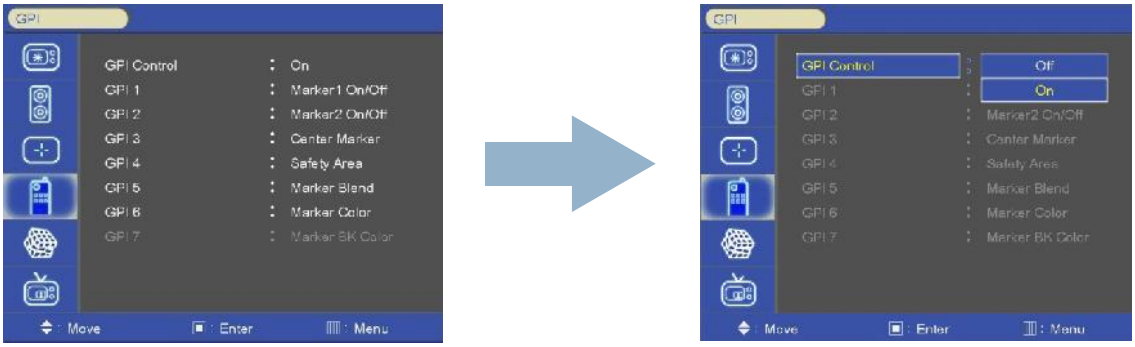
- Marker Line color: Select Marker line color (White, yellow, Blue, reD, Black)
- Safety Line color: Select Safety line color (White, yellow, Blue, reD, Black)
- Marker Back color: Select Marker Back color. (none, Gray, White, Blue, Black)
- Safety Back color: Select Safety Back color. (none, Gray, White, Blue, Black)
- Marker BK Blend color: Select Marker blending level. (0 ~ 5)
- Safety BK Blend color: Select Safety blending level. (0 ~ 5)

10-6. GPI Preset 1 & GPI Preset 2

- for Setting the marker to use by GPi controller.
- GPi preset markers are only worked by GPi controller

11. GPI Menu Options

11-1. GPI Control & GPI#



- for allocating functions to particular GPi pins.

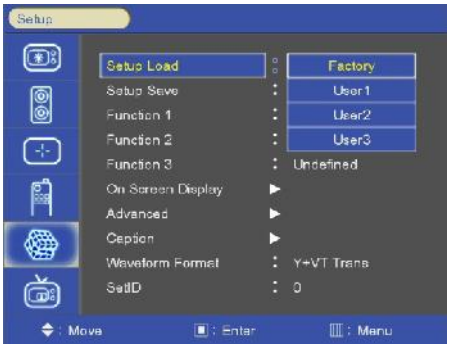
- When remote control operations are to be performed using the GPi controller.

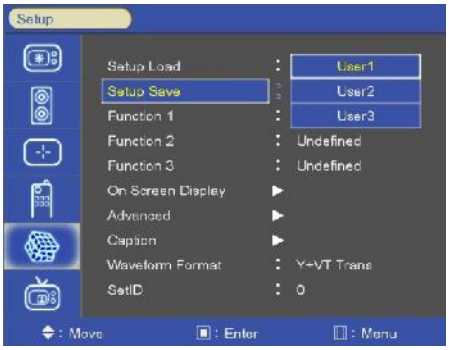
- GPi control: GPi function enable/Disable

- GPi 1 ~ 7

GPI function	description
unDefineD	not set (no function allocated)
Marker1 on/off, Marker2 on/off	Displays the markers which have been set by the GPi PreSet1, 2 items on the screen.
center Marker	Displays the center marker.
Safety area	Displays the Safety area.
Marker Blend	Select marker background blend level.
Marker color	Select maker line color.
Marker BK color	Select marker background color.
tally r, tally G, tally y	for the red, Green or yellow tally lamp. yellow when both r & G are selected
Scan	over Scan/Zero Scan/under Scan/ Pixel to Pixel
input composite1, input G.B.r, input SDi1, input SDi2,input y.Pb.Pr , input Pc , input DVi, input HDMi	Switches the input source.
Menu Key, enter Key, up Key, Down Key Left Key, right Key	use the key function by GPi.
GPi 7 : Power Key(fixed)	

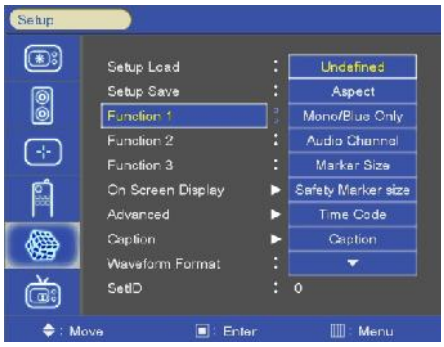
12-1. Setup Load & Setup Save





- Setup Load: Load user saved values or default value - Setup Save: Save user setting values at user 1, 2, 3.

12-2. Function 1 & Function 2 & Function 3



» Function 1, 2, 3: Select the function to be allocated to the function 1, 2, 3 buttons

function1&2 button	description
unDefineD	not set (no function allocated)
aspect	Sets the aspect ratio of the images
Mono/Blue only	execute Mono color or Blue only
audio channel	Select the extract the embedded audio channel in SDi input.
Marker size	Marker size Select
Safety area Marker	Safety area Select
time code	time code Display
caption	closed caption (analog Signal only
audio mute	toggles audio status of speaker/headphone in mute.
Still image	toggles Video status between motion and still image.
Zoom	Zoom function is operated(off, 2x, 3x, 4x, 5x)
flip	H-flip Display on/off
Gamma Select	Select Gamma curve.
PiP func & input	change PiP input sources when PiP is on
Sub Win full	Display same full images on PiP screen
Sub Win Part	Display same parts(4:3) images on PiP screen

12-3. On Screen display

12-4. OSd Option

» Language: Select a language for the menu to appear in.
(english, Spanish, Portuguese, German, french, italian)

» oSD Position: L-t, r-t, c, L-B, r-B

» Message oSD: Message oSD display enable/disable

» oSD transparency: Disable blending oSD background with video image.

12-5. time code

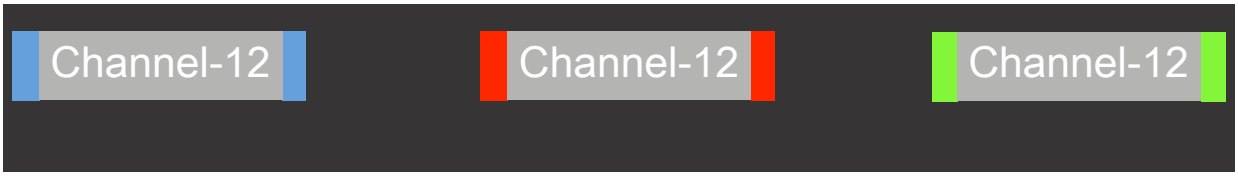
» time code enable: time code Display (off/Ltc/Vitc, SDi only)

» time code size: time code size select. (Small, Middle, Large)

» time code Position: time code display position selects (L-t, c-t, r-t, L-B, c-B, r-B)

» time code transparency: Disable blending time code background with video image. (0%, 25%, 50%, 75%, 100%)

12-6. under Monitor display (color: tally R/G mode action)



» uMD: uMD display on/off

» uMD character: uMD character Select

» uMD Position: uMD display position select (L-t, c-t, r-t, L-B, c-B, r-B)

» uMD fG color: uMD character color Select (rGB_255_192_128_transparency)

» uMD BG color: uMD BG color Select (rGB_255_192_128_transparency)

12-7. Input Name

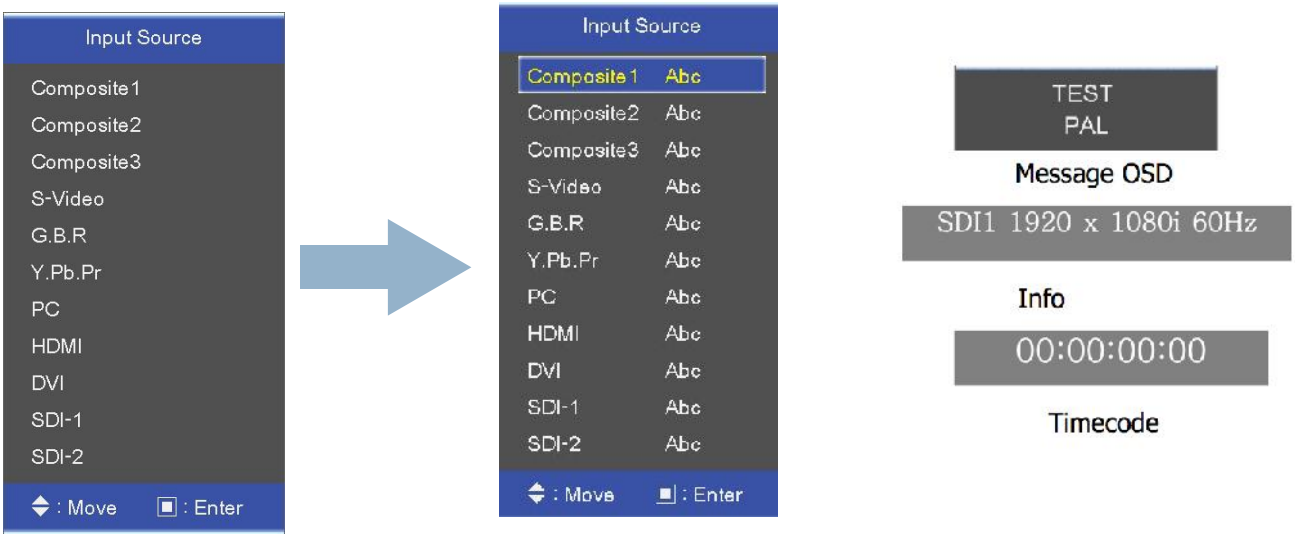
Display user name instead of input source name on source oSD and message oSD

- example and naming method

1) if input name is enable, user can see the below input Source oSD

2) Press function 3 on the controller to go into name edit mode

3) Make name in 5 characters by uP/DoWn key



12-8. Info Message

- info Message Display on/off

12-9. SdI Signal state

- SDi Signal date display on/off
(H/V sync, image, audio, audio Phase,
eDH packet, eDH ff crc,
eDH aPcrc, Sac, eaV, VPi)

12-10. Advanced

- information, control, Screen Saver, Screen control, fan control, x768 Mode

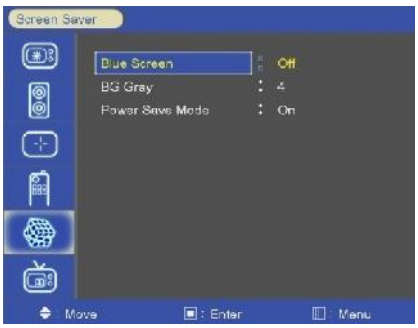
12-11. Information

- Version, release day, release time and operating time

12-12. Control

- » front LeD: front LeD on/off
- » Local enable: Power, up and down keys are only enabled, when Local enable is off.
- » remote control(option): Select the controller of local or remote. if remote controller is selected, both local (front key) and remote are enabled. However select local, local key only operated.

12-13. Screen Saver



- » Blue Screen: enables screen saver functions to avoid panel burning.
- » BG Gray: Select gray level on besides display picture
- » Power save Mode: DPMS (Display Power Management Signaling) Power Save Mode

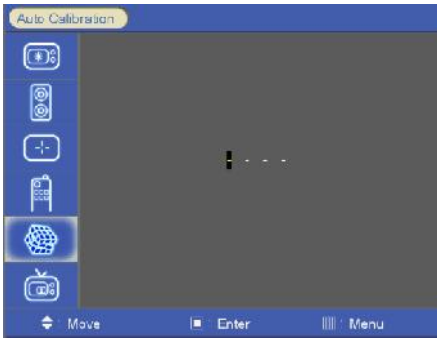
12-14. Screen Control

Auto Calibration for qualified personnel ONly

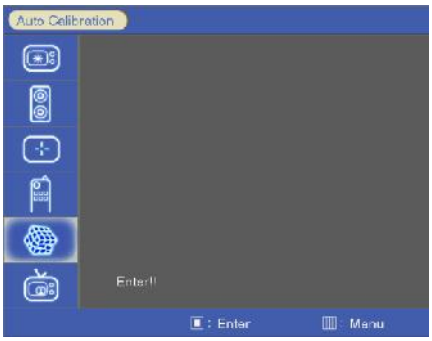
connects ca-210 (Minolta) with rS-232 and executes an automatic screen regulation.

StePS:

1. Set the baud rate of ca-210 to 9800.
2. use rS-232 cable and connect to rS-232 in port.
3. Set full white pattern in SDi input
4. Press the password keys
5. Default password key.(function3 key, function2 key, function1 key, Down key)
6. Probe set position in yellow square box, and then start auto calibration as follow

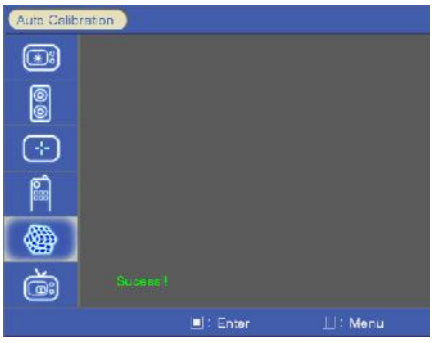


1) Press the password key.



2) Press 'Sel/input' button to start auto calibration

3) Progress



4) Success

Screen Control continued

5) Result messages are 'Not Prepared!!', 'fail!!' and 'Success!!'.

» "not prepared!!" : cannot communication with ca-210

» "fail!!" : cannot search target LV or temp values.

Note :

» target Lv (full white is 100 cd/m2), color temperature(3000c~12000c)

» if not succeed, values are restored as lately succeed values or factory default values.

» continued fail, Backlight brightness should be adjust to other value.

Reset Calibration

» calibration reset (factory default values or lately succeed values)

» Password is same the auto calibration password.

Backlight Adjust

» inverter Backlight Level select (0~100)

Gamma Select

» Gamma Level Select (0.8, 1.0, 1.1, 1.2, 1.5, 2.0)

deinterlacer

» Deinterlacer function on/off

Interal Pattern:

» 100% color Bars, 75% color Bars, Luma, rGB, White, Black, red, Blue, Green

12-15. fan Control

» fan control: internal fan controls driving option by temperature sensor auto / force on / force off

» fan active temperature: adjusts fan driving temperature by celsius degree.
it works only when the fan control Setting is auto.

» Hysteresis: adjusts fan driving hysteresis temperature by celsius degree. (1~10)

» Shutdown: for a monitor protection is above of 75 , Power off.

» Mcu fan control: control main Mcu fan on/off

12-16. X768 Mode

» Selects X768 native Pc video timings. (auto/1024x/1280x/1360x/1366x)

12-17. Caption

closed caption: 608 Line21, 608 anc, 608 transcoded mode Select

608 caption mode Select. (c/c1, c/c2, c/c3, c/c4, text1, text2, text3, text4, off)

12-18. Waveform format

Press the WaVeforM button to display the WaVeforM Mode

12-19. y-Pb-Pr Waveform

y_Pb_Pr WaVeforM & audio Lever Meter & info Window & time code Display.

12-20. y-Waveform + Vector Scope

WaVeforM & Vector Scope & audio Lever Meter & info Window & time code Display.

12-21. double

SDi 1, 2 & WaVeforM & Vector Scope & audio Lever Meter & info Window & time code Display.

12-22. y-Waveform + Vector Scope trans

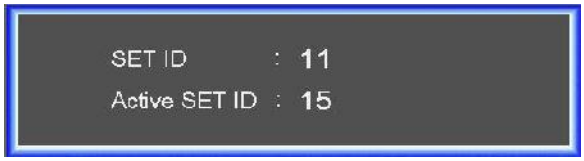
WaVeforM & Vector Scope trans.

12-23. Set Id & Active Set Id

if control each Board, must Set iD numbers of each Board (01~99).

Set active Set iD number Before control each Board by remote control or rS-232

if control only 15th Board, active Set iD must Set 15.



1. Press the BLue (remote control) button and then use 0~9 button to select the active Set iD.

2. if Press the reD (remote control) button, delete iD number.

13. PIP (Picture In Picture)

» Watch two programs or source at the same time. and Set up PiP size and position.

» only Dual Link model Select

13-1. PIP ON/Off

» control PiP function on/off.

13-2. Input Source

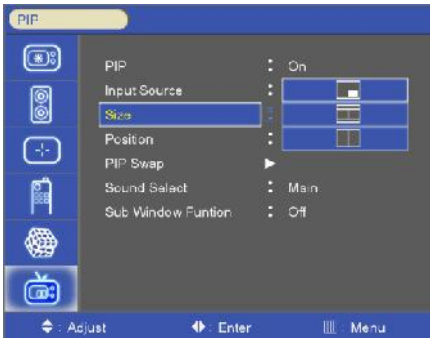
» PiP input Source can operate with different signal and type.

» analog (composite1, 2, 3, y.Pb.Pr, GBr, Pc) inputs + Digital (DVi, HDMi) + SDi (SDi1, SDi2) inputs

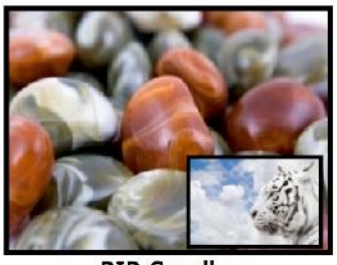
» SDi + SDi input PiP

» ex) aV + S-Video (X), DVi + SDi (o), Pc + DVi (o), SDi1+SDi2 (o)

13-3. Aspect Ratio



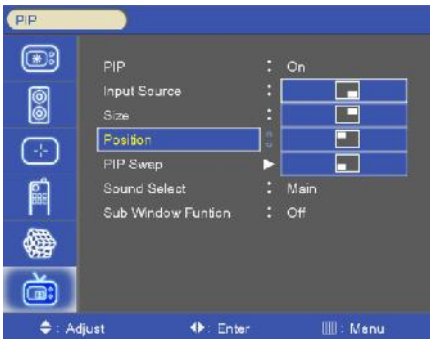
» choose PiP size of Small/PoP1/PoP2


PIP Small

PIP1

POP2

13-4. Position



» choose the pip position on the each corner of the panel

13-5. PIP Blend

-Blend to PiP size of Small

13-6. PIP Swap

» using Swap option, you can exchange two programs or source at the same time.

13-7. Audio Select

» using Sound Swap option, you can exchange the sound of two programs or source at the same time.

13-8. Sub Window function

Sub Window full

Sub Window Part

» full Sub Window: Display the same full images on PoP1 screen.
» Part Sub Window: first image scale 4:3 aspect ratio and then display on PoP2 screen.
» fuLL, Part function is only used in Digital input (SDi1, SDi2, DVi, HDMi)

14. Remote Control key Arrangements

» PBM-232-3G/ PBM-246-3G

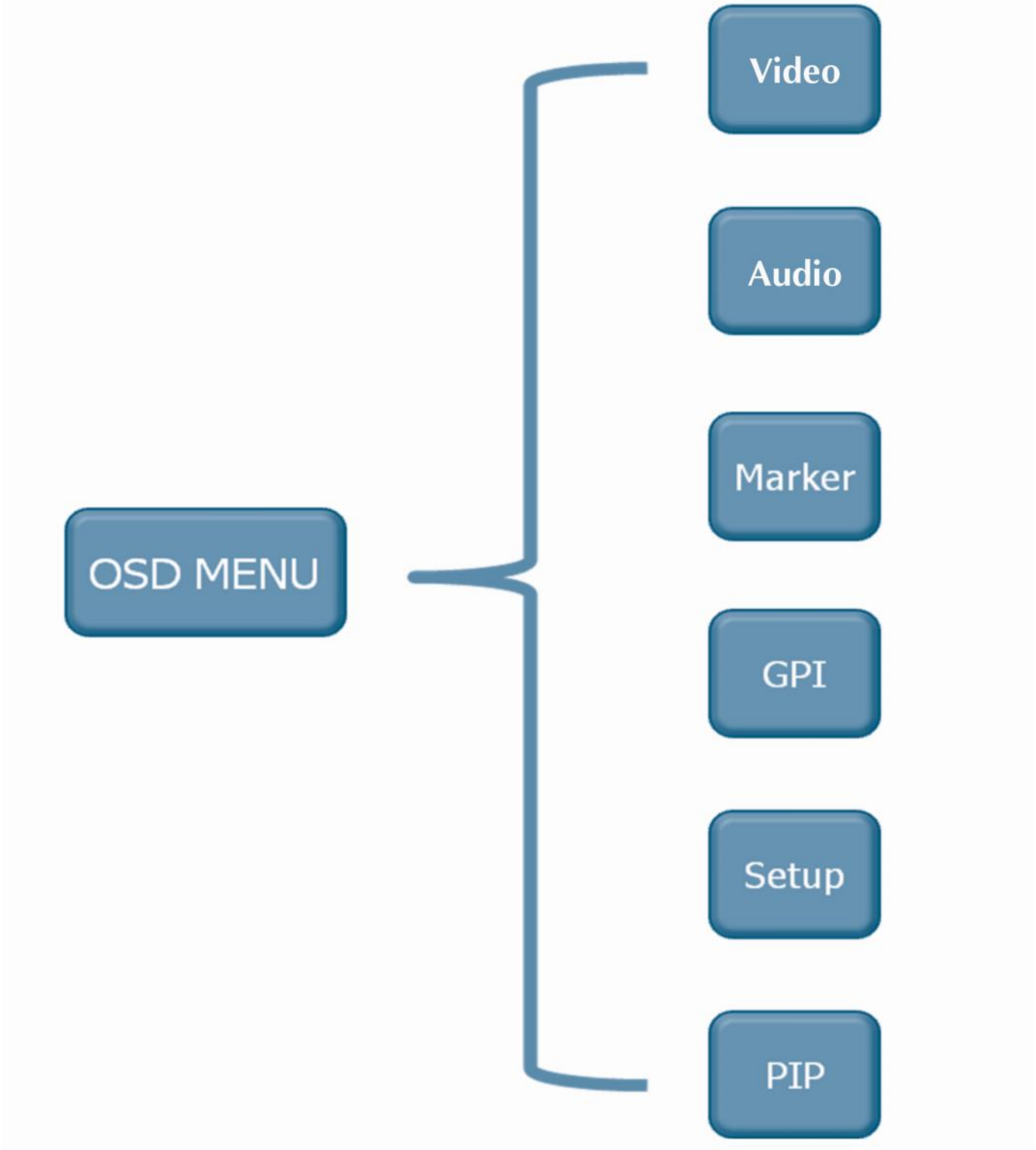
< remote control Picture >

14. Remote Control key Arrangements continued

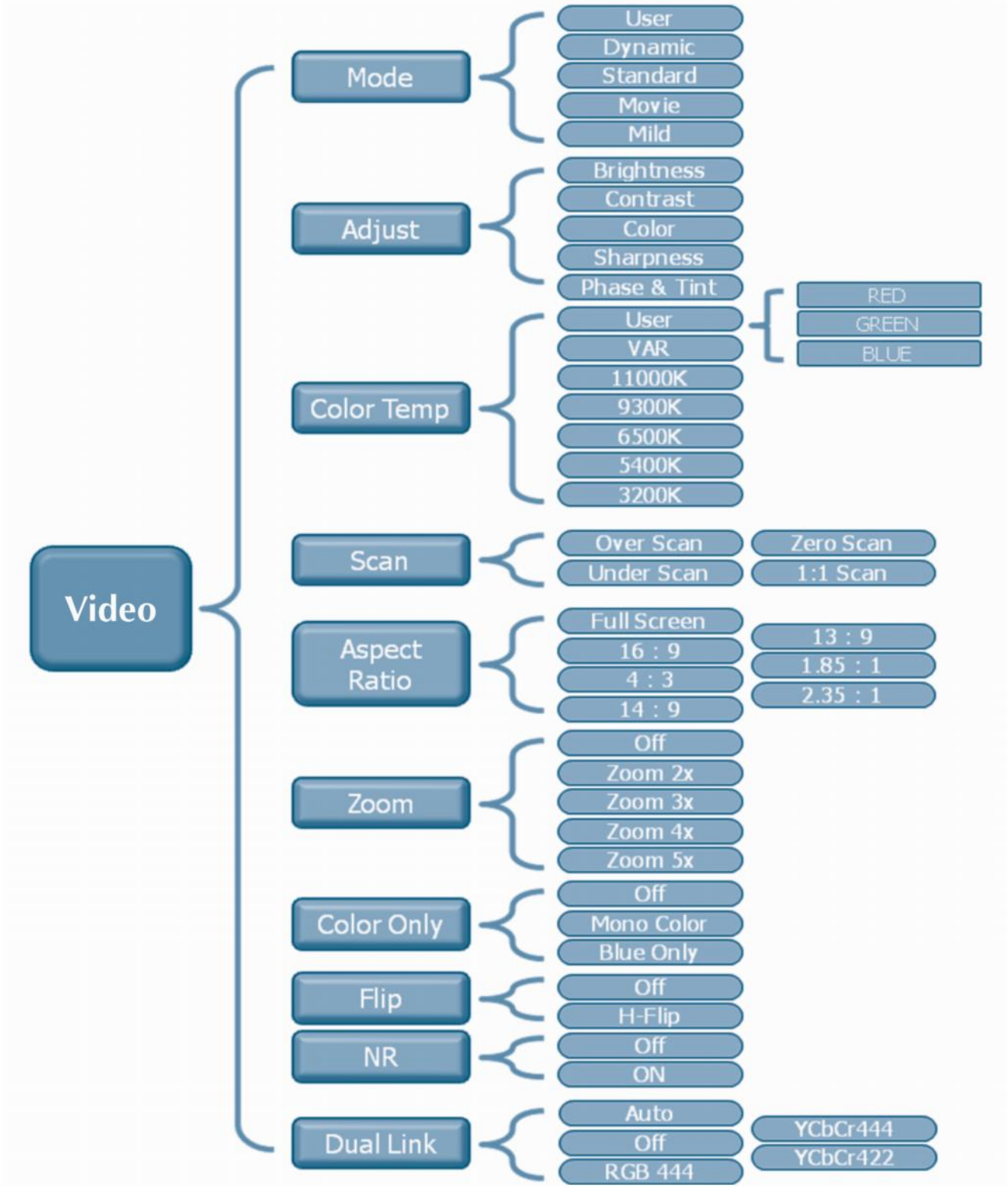
14-1. IR-Remote Controller descriptions

Key Name	description
Power	Power on/off
Menu	Same as “Menu key” on keypad.
up	Same as “up key” on keypad
Down	Same as “Down key” on keypad
right	Same as “right key” on keypad
Left	Same as “Left key” on keypad
enter	Same as “Select key” on keypad
eXit	exit oSD menu
info	Displays input source information
Sleep	n/a
Mute	toggles sound status of speaker/headphone in mute.
Source	activates oSD of source change. Deactivates oSD of source change.
PSM(Picture Standard Mode)	activates oSD of picture standard mode. Deactivates oSD of picture standard mode.
SSM(Sound Standard Mode)	activates oSD of sound standard. Deactivates oSD of sound standard.
arc	activates oSD of aspect ratio control. Deactivates oSD of aspect ratio control.
StiLL	toggles picture status between motion and still image.
Pre_cH	n/a
Dual i-ii / MtS	n/a
PiP	toggles PiP status
PiP input	change PiP input sources when PiP is on
PiP Size	change PiP image size when PiP is on
PiP Position	change PiP position when PiP image size is not double screen.
SWaP	Swap main input source and PiP input source
S.Select	Select main/PiP sound source when PiP is on
Pc	Selects input source of Pc.
tV	n/a
0~9	enter digit value to active Set iD
BLue	Set active Set iD
reD	Delete active Set iD
MiX	activates neptune oSD menu.
ttX on	n/a

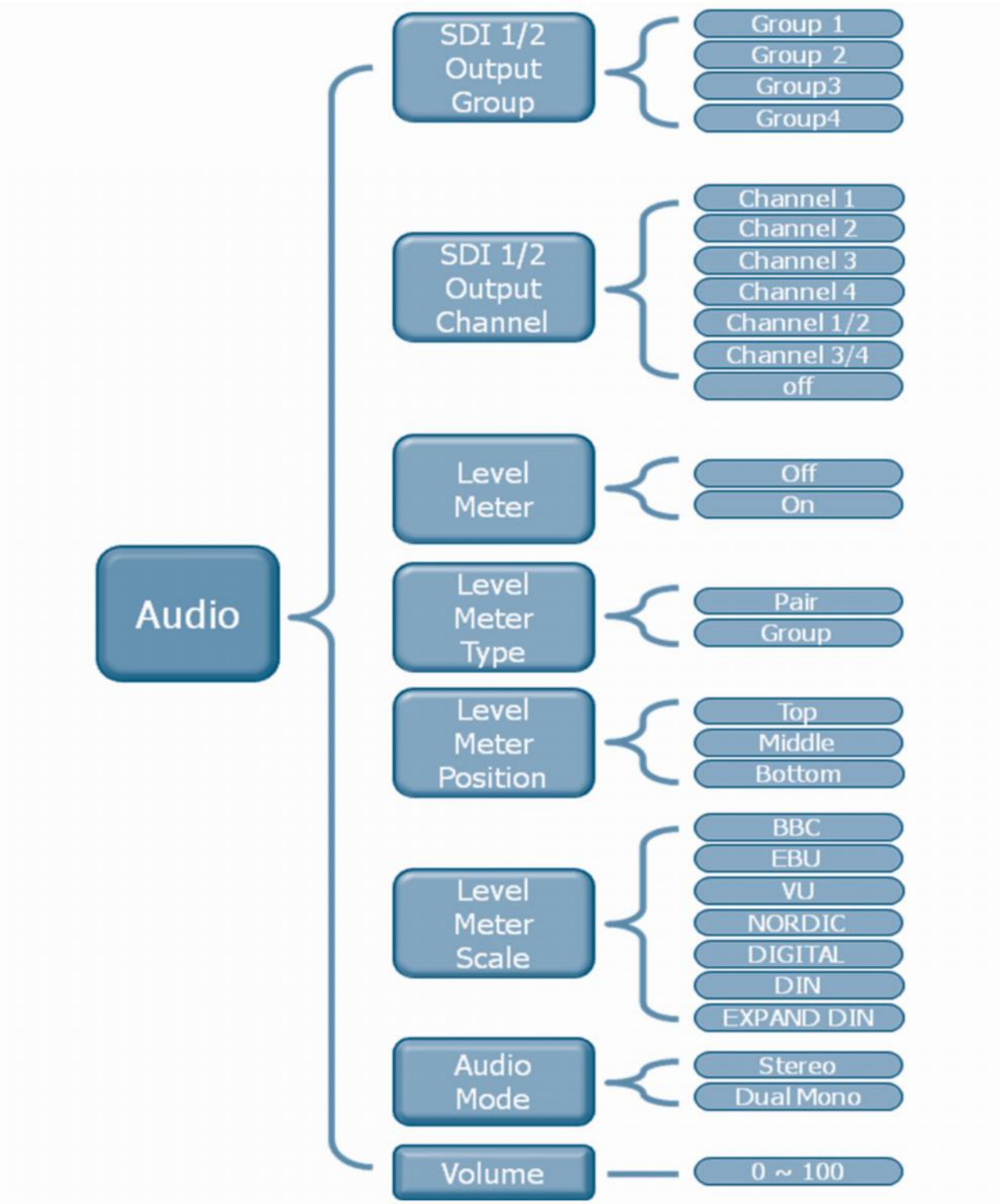
15. OSd tree



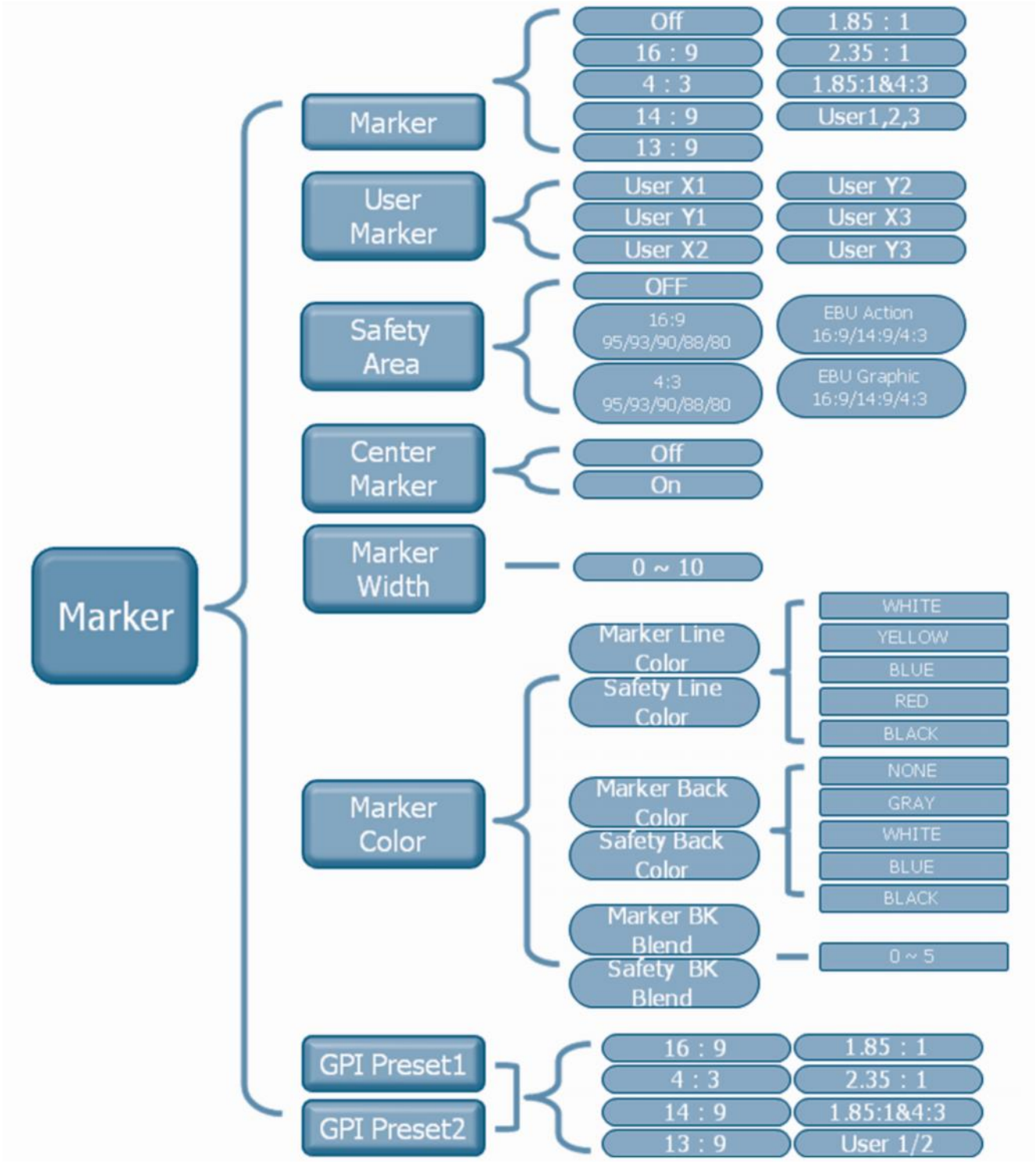
15-1. Video


Video
Mode
User
Dynamic
Standard
Movie
Mild
Adjust
Brightness
Contrast
Color
Sharpness
Phase & Tint
Color Temp
User
RED
GREEN
BLUE
VAR
11000K
9300K
6500K
5400K
3200K
Scan
Over Scan
Under Scan
Zero Scan
1:1 Scan
Aspect Ratio
Full Screen
16 : 9
4 : 3
14 : 9
13 : 9
1.85 : 1
2.35 : 1
Zoom
Off
Zoom 2x
Zoom 3x
Zoom 4x
Zoom 5x
Color Only
Off
Mono Color
Blue Only
Flip
Off
H-Flip
NR
Off
ON
Dual Link
Auto
Off
RGB 444
YCbCr444
YCbCr422

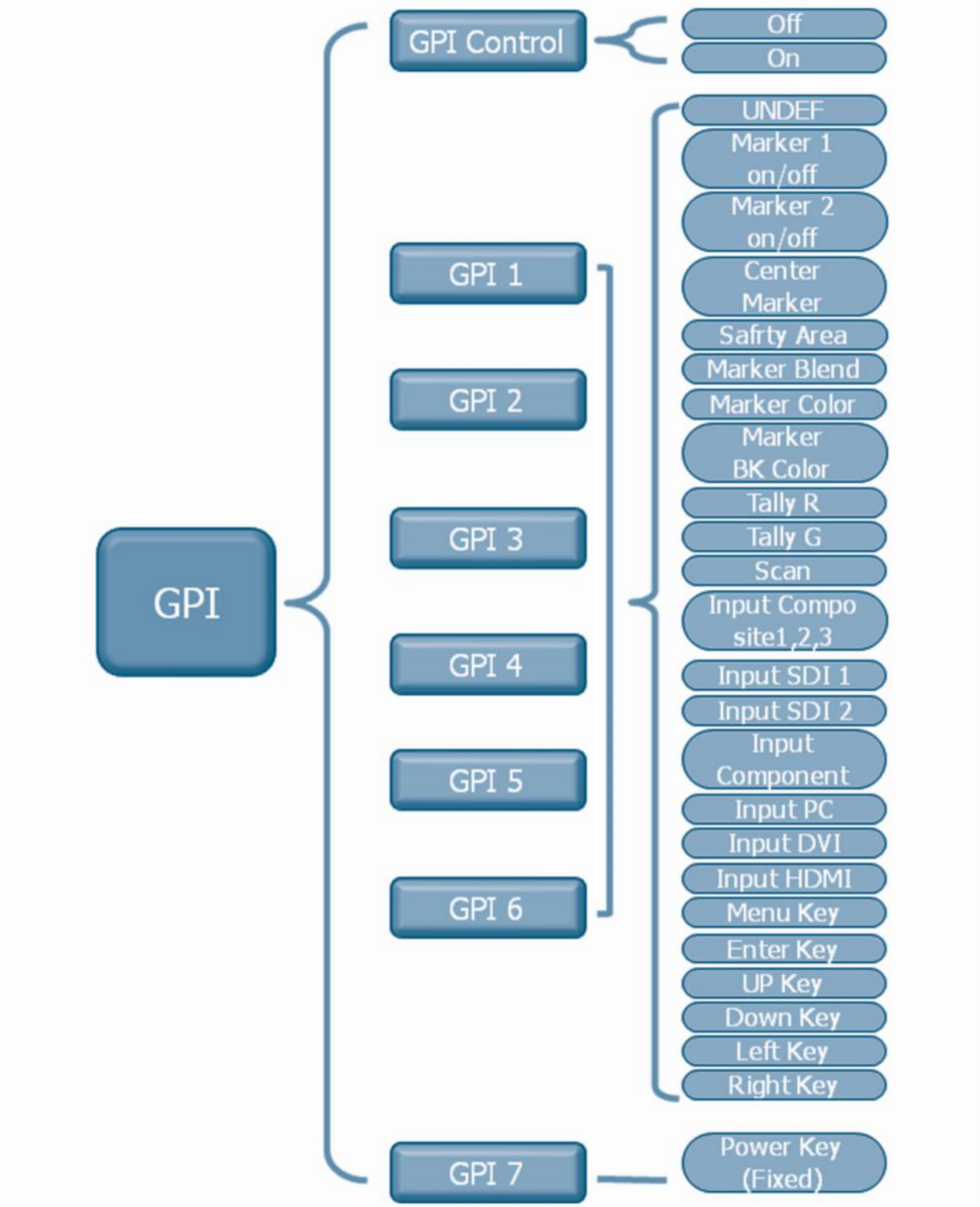
15-2. Audio


Audio
SDI 1/2 Output Group
Group 1
Group 2
Group3
Group4
SDI 1/2 Output Channel
Channel 1
Channel 2
Channel 3
Channel 4
Channel 1/2
Channel 3/4
off
Level Meter
Off
On
Level Meter Type
Pair
Group
Level Meter Position
Top
Middle
Bottom
Level Meter Scale
BBC
EBU
VU
NORDIC
DIGITAL
DIN
EXPAND DIN
Audio Mode
Stereo
Dual Mono
Volume
0 ~ 100

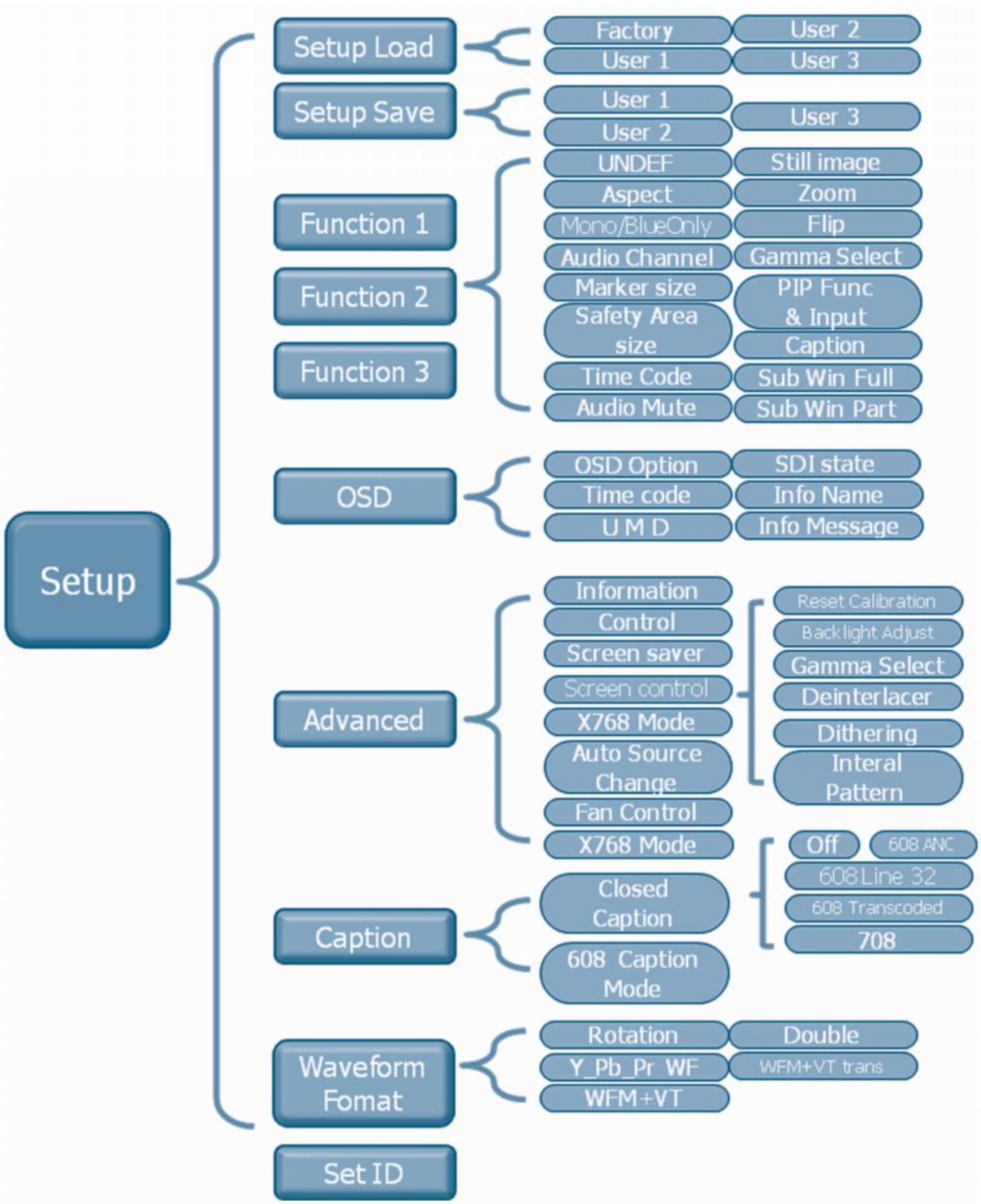
15-3. Marker


Marker
Marker
Off
16 : 9
4 : 3
14 : 9
13 : 9
1.85 : 1
2.35 : 1
1.85:1&4:3
User1,2,3
User Marker
User X1
User Y1
User X2
User Y2
User X3
User Y3
Safety Area
OFF
16:9 95/93/90/88/80
4:3 95/93/90/88/80
EBU Action 16:9/14:9/4:3
EBU Graphic 16:9/14:9/4:3
Center Marker
Off
On
Marker Width
0 ~ 10
Marker Color
Marker Line Color
Safety Line Color
WHITE
YELLOW
BLUE
RED
BLACK
Marker Back Color
Safety Back Color
NONE
GRAY
WHITE
BLUE
BLACK
Marker BK Blend
Safety BK Blend
0 ~ 5
GPI Preset1
GPI Preset2
16 : 9
4 : 3
14 : 9
13 : 9
1.85 : 1
2.35 : 1
1.85:1&4:3
User 1/2

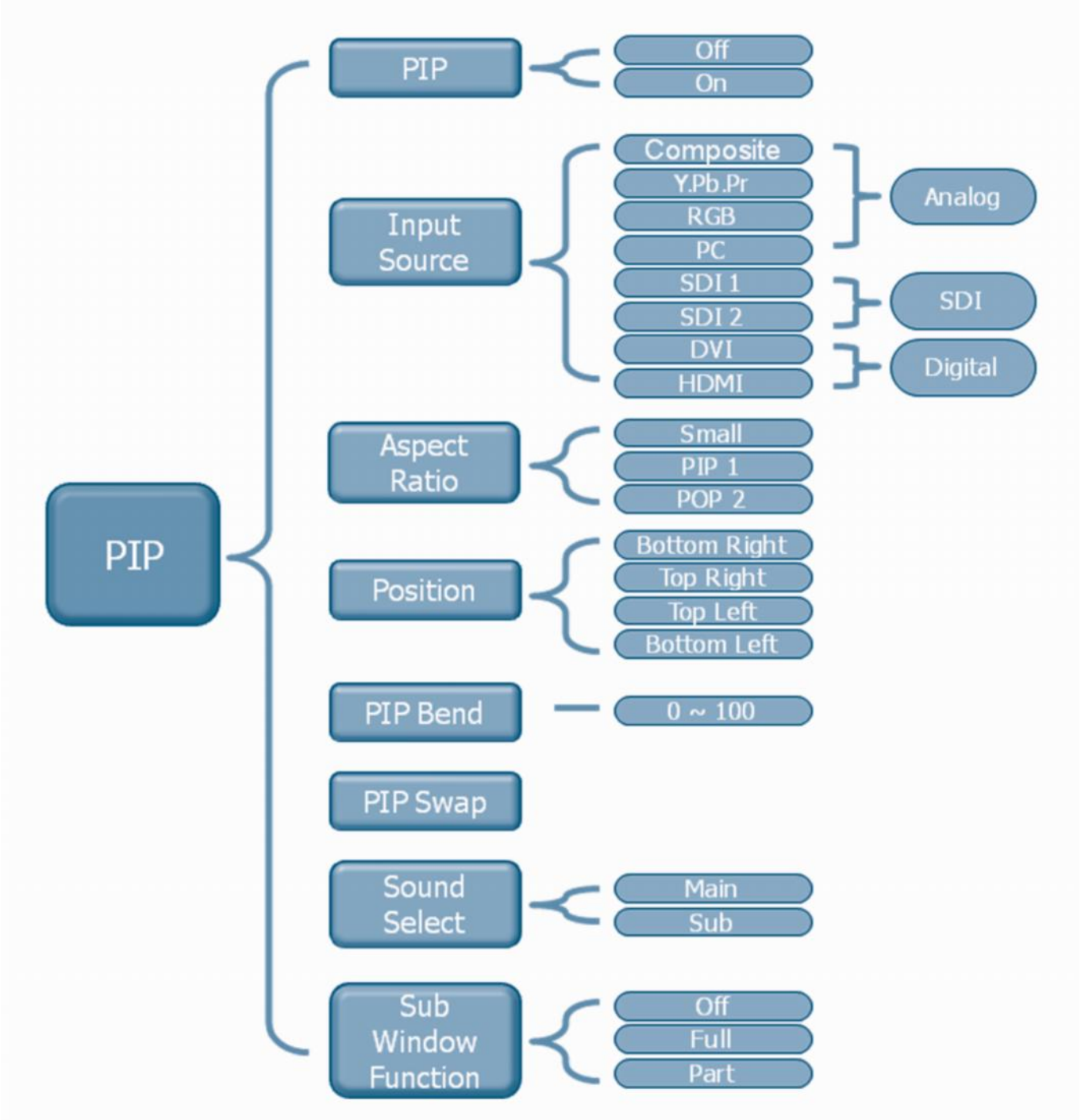
15-4. GPI


GPI
GPI Control
Off
On
GPI 1
GPI 2
GPI 3
GPI 4
GPI 5
GPI 6
UNDEF
Marker 1 on/off
Marker 2 on/off
Center Marker
Safrty Area
Marker Blend
Marker Color
Marker BK Color
Tally R
Tally G
Scan
Input Compo site1,2,3
Input SDI 1
Input SDI 2
Input Component
Input PC
Input DVI
Input HDMI
Menu Key
Enter Key
UP Key
Down Key
Left Key
Right Key
GPI 7
Power Key (Fixed)

15-5. Setup


Setup
Setup Load
Factory
User 1
User 2
User 3
Setup Save
User 1
User 2
User 3
Function 1
Function 2
Function 3
UNDEF
Aspect
Mono/BlueOnly
Audio Channel
Marker size
Safety Area size
Time Code
Audio Mute
Still image
Zoom
Flip
Gamma Select
PIP Func & Input
Caption
Sub Win Full
Sub Win Part
OSD
OSD Option
Time code
U M D
SDI state
Info Name
Info Message
Advanced
Information
Control
Screen saver
Screen control
X768 Mode
Auto Source Change
Fan Control
X768 Mode
Reset Calibration
Backlight Adjust
Gamma Select
Deinterlacer
Dithering
Interal Pattern
Caption
Closed Caption
608 Caption Mode
Off
608 ANC
608 Line 32
608 Transcoded
708
Waveform Fomat
Rotation
Y_Pb_Pr WF
WFM+VT
Double
WFM+VT trans
Set ID

15-6. PIP


PIP
PIP
Off
On
Input Source
Composite
Y.Pb.Pr
RGB
PC
SDI 1
SDI 2
DVI
HDMI
Analog
SDI
Digital
Aspect Ratio
Small
PIP 1
POP 2
Position
Bottom Right
Top Right
Top Left
Bottom Left
PIP Bend
0 ~ 100
PIP Swap
Sound Select
Main
Sub
Sub Window Function
Off
Full
Part

16. Supported Input Modes

16-1. Supported Signals

Items		Specifications
PBM-217S Display	Panel	17” WXGA TFT LCD
	Resolution	1366 horizontal. by 768 vertical.(contrast 900:1)
	Brightness	350 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)
PBM-317 Display	Panel	17” TFT LCD
	Resolution	1920 horizontal. by 1080 vertical.(contrast 900:1)
	Brightness	350 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)
PBM-319S Display	Panel	19” WXGA TFT LCD
	Resolution	1366 horizontal. by 768 vertical.(contrast 1000:1)
	Brightness	250 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)
PBM-220S Display	Panel	20” TFT LCD
	Resolution	1600 horizontal. by 900 vertical.(contrast 3000:1)
	Brightness	250 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)
PBM-221S Display	Panel	21” TFT LCD
	Resolution	19020 horizontal. by 1080 vertical.(contrast 1000:1)
	Brightness	350 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)
PBM-224S Display	Panel	24” TFT LCD
	resolution	1920 horizontal. by 1200 vertical.(contrast 1000:1)
	Brightness	400 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)
PBM-232S Display	Panel	32” TFT LCD
	Resolution	1920 horizontal. by 1080 vertical.(contrast 1000:1)
	Brightness	450 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)
PBM-240S Display	Panel	40” TFT LCD
	Resolution	1920 horizontal. by 1080 vertical.(contrast 3000:1)
	Brightness	500 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)
PBM-246S Display	Panel	46” TFT LCD
	Resolution	1920 horizontal. by 1080 vertical.(contrast 4000:1)
	Brightness	450 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)
PBM-255S Display	Panel	55” TFT LCD
	Resolution	1920 horizontal. by 1080 vertical.(contrast 3000:1)
	Brightness	500 cd/m2
	Viewing angle	RL 178 (Typ), U/D 178 (Typ)

Items		Specifications
Supported Signals	Serial Digital interface	HD SDI- 2.970 Gb/s & 1.485 Gb/s
		SD SDI- 270 Mb/s
	HDMI DVI-I (DVI+VGA_IN)	H frequency range : 20~82 kHz
		V frequency range : 55 ~ 90 Hz
		Maximum resolution :1920x1080 60Hz
		Maximum pixel rate : 162 MHz
	ANALOG RGB	H frequency range : 20~82 kHz
		V frequency range : 55 ~ 90 Hz
		Maximum resolution : 1920x1080 60Hz
		Maximum pixel rate : 162 MHz
		DTV mode support: 720P/1080i/1080p
		SOG sync support
	ANALOG Component (DTV/DVD)	1080p - 1080i - 720P -480i / 576i - 480P / 576P

16. Supported Input Modes

16-2. SDI input

SDI input		
SDI input Signal formats	SMPTE-372M	Dual Link HD-SDI YPbPr (4:2:2) : 1080P(50/59.94/60)
		Dual Link HD-SDI YPbPr (4:4:4)
		1080P (30/29.97/25/24/23.98)
		1080i (29.97/25/24/23.98)
		720P (60/59.94/50)
	SMPTE-260M	1920x1035i(60/59.94)
	SMPTE-259M	1920x1080i(50)
	SMPTE-274M	1920x1080i (50/59.94/60)
		1920x1080P (30Psf/25Psf/24Psf/30/25/24)
	SMPTE-296M	1280x720P (24/25/30/50/59.94/60)
	SMPTE-125M	480i(59.94)
	ITU-R BT.601	576i(50)

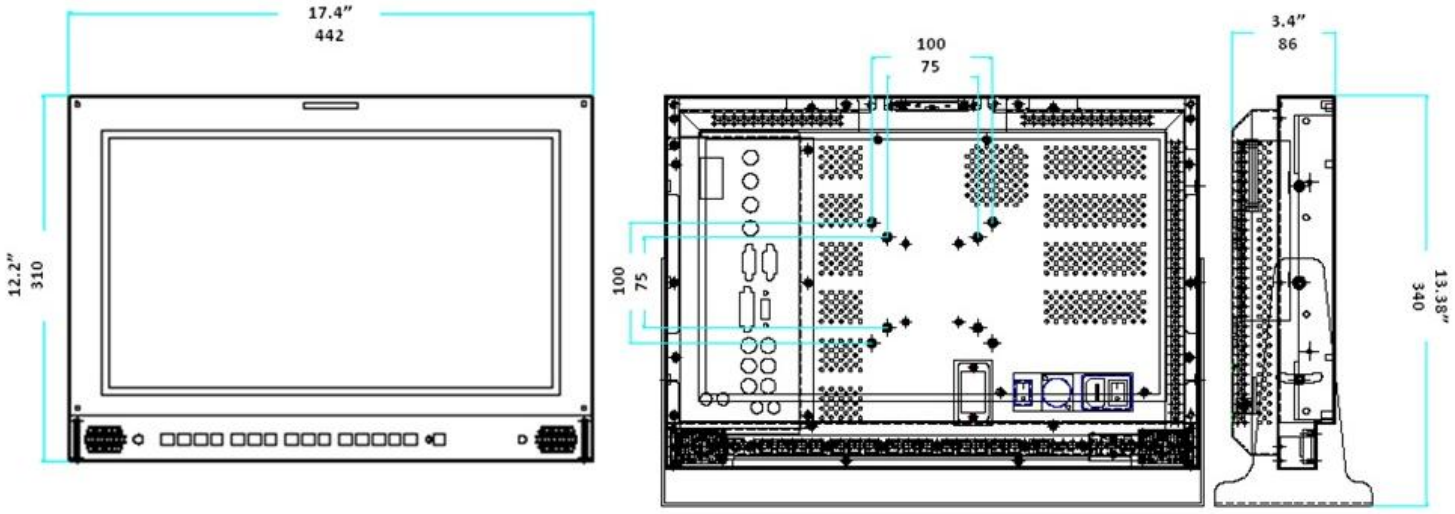
16-3. DVI & PC input

Section	Resolution	h frequency (khz)	V frequency (hz)	Pixel frequency (Mhz)	Comment
DTV	720x480	15.735	59.94	13.500	Interlaced
	720x576	15.735	50.0	13.595	Interlaced
	720x480	31.469	59.94	25.175	
	720x576	31.250	50.0	26.566	
	1280x720	44.964	59.94	74.176	
	1280x720	37.500	50.0	60.466	
	1920x1080	33.750	60.0	74.25	Interlaced
	1920x1080	28.125	50.0	70.723	Interlaced
	1920x1080	31.250	50.0	72.000	Interlaced
	1920x1080	67.5	60	148.5	Progressive

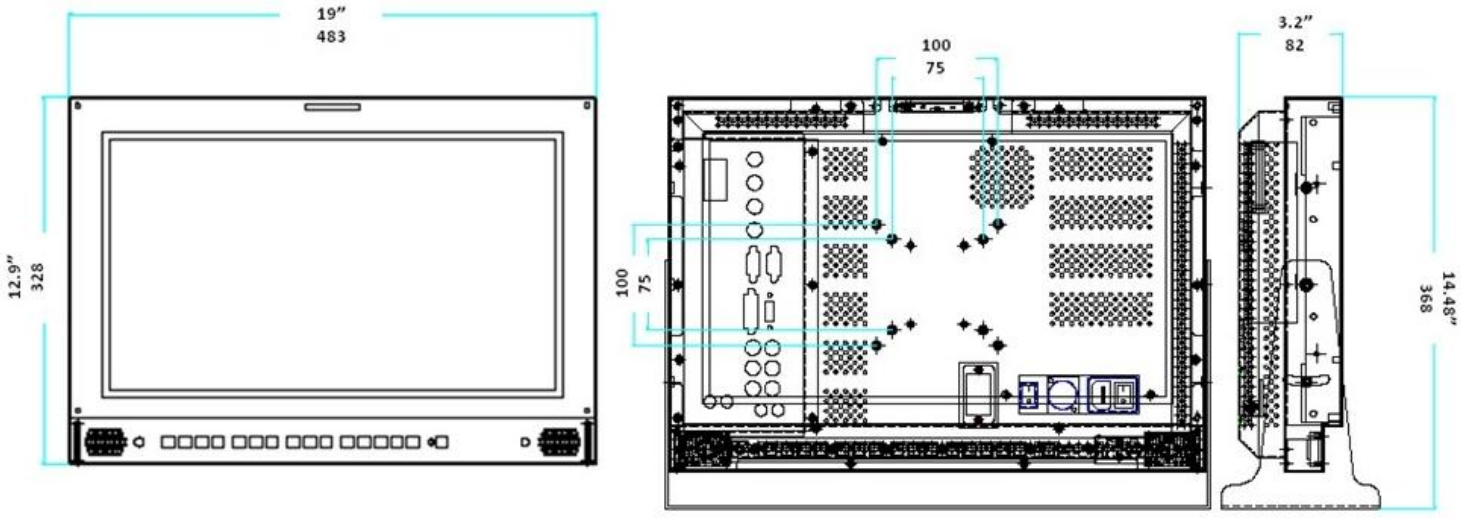
Section	Resolution	h frequency (khz)	V frequency (hz)	Pixel frequency (Mhz)	Comment
PC	640x400	37.861	85.08	31.5	
	640x350	31.469	70.087	25.175	
	640x350	37.861	85.08	31.5	
	640x480	31.469	59.94	25.175	
	640x480	35.000	66.667	30.24	
	640x480	34.940	69.884	28.513	
	640x480	37.861	72.809	29.765	
	640x480	37.500	75.0	31.5	
	640x480	43.269	85.008	36.0	
	640x480	45.540	90.0	37.889	
	720x400	31.469	70.087	28.322	
	720x400	37.927	85.039	35.5	
	800x600	35.156	56.25	36.0	
	800x600	37.879	60.317	40.0	
	800x600	43.764	70.02	45.513	
	800x600	48.077	72.188	50.0	
	800x600	46.875	75.0	49.5	
	800x600	53.674	85.061	56.25	
	800x600	56.880	90.0	60.065	
	832x624	49.726	74.551	57.284	
	1024x768	48.780	60.001	64.11	
	1024x768	48.363	60.004	65.0	
	1024x768	56.476	70.069	75.0	
	1024x768	57.703	72.039	78.476	
	1024x768	60.241	74.927	81.724	
	1024x768	60.030	75.029	78.75	
	1024x768	68.677	84.997	94.5	
	1024x768	72.810	90.0	100.187	
	1152x864	53.700	60.0	81.624	
	1152x864	62.932	69.924	96.663	
	1152x864	67.500	75.0	104.993	
	1152x870	68.681	75.062	100.0	
	1152x900	61.846	66.0	94.787	
	1152x900	72.713	76.047	105.561	
	1280x720	47.760	60.0	74.481	
	1280x720	52.500	70.0	89.040	
	1280x720	54.072	72.0	91.706	
	1280x720	56.400	75.0	95.654	
	1280x768	60.150	75.0	102.977	
	1280x960	60.000	60.0	102.104	
	1280x960	59.640	60.0	102.104	
	1280x1024	63.337	59.978	108.18	
	1280x1024	63.981	60.02	108.0	
	1280x1024	64.754	60.06	108.992	
	1280x1024	63.600	60.0	108.883	
	1360x768	47.700	60.0	84.700	
	1600x1200	75.000	60.0	162.000	

17. Mechanical Dimension

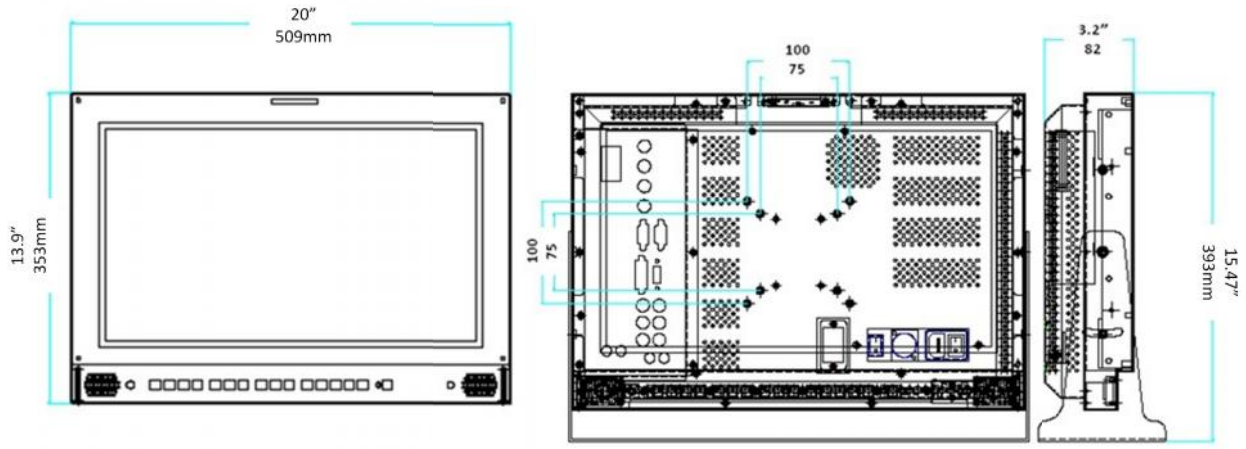
17-1. PBM-217S / PBM-317S / PBM-219S



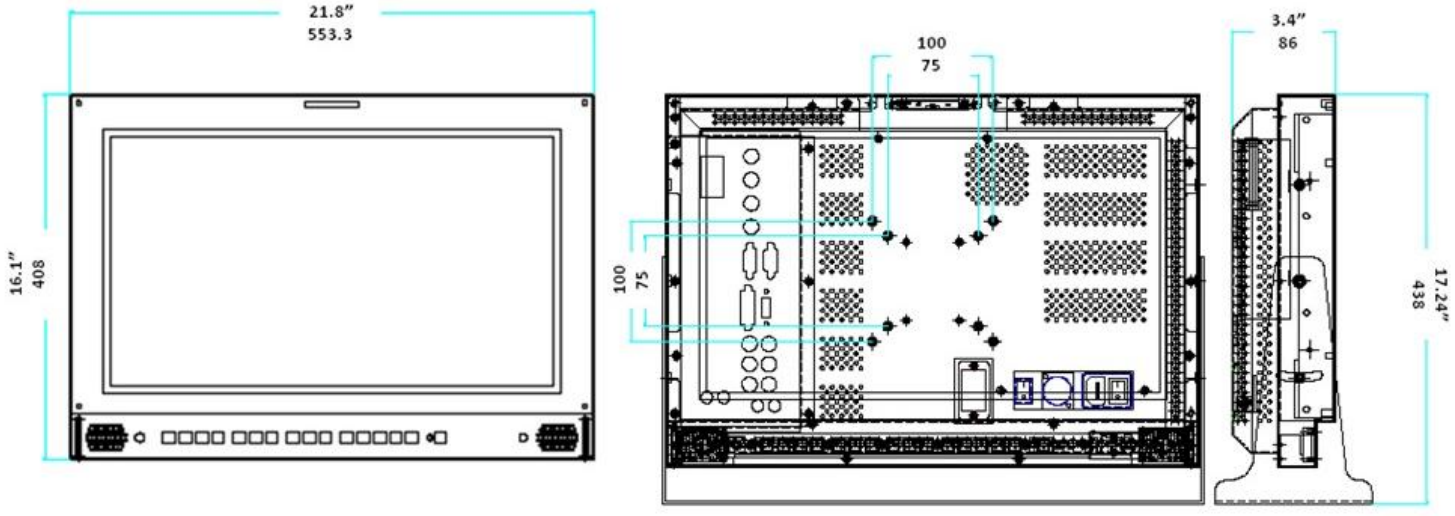
17-2. PBM-220S



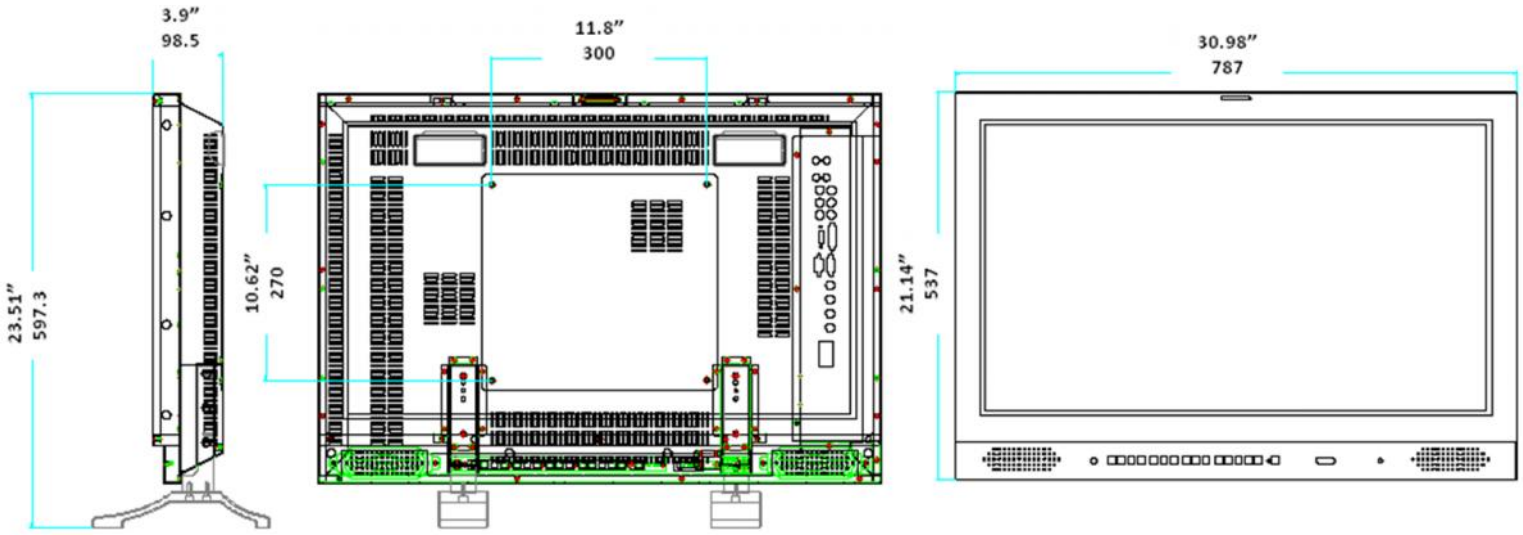
17-3. PBM-221S



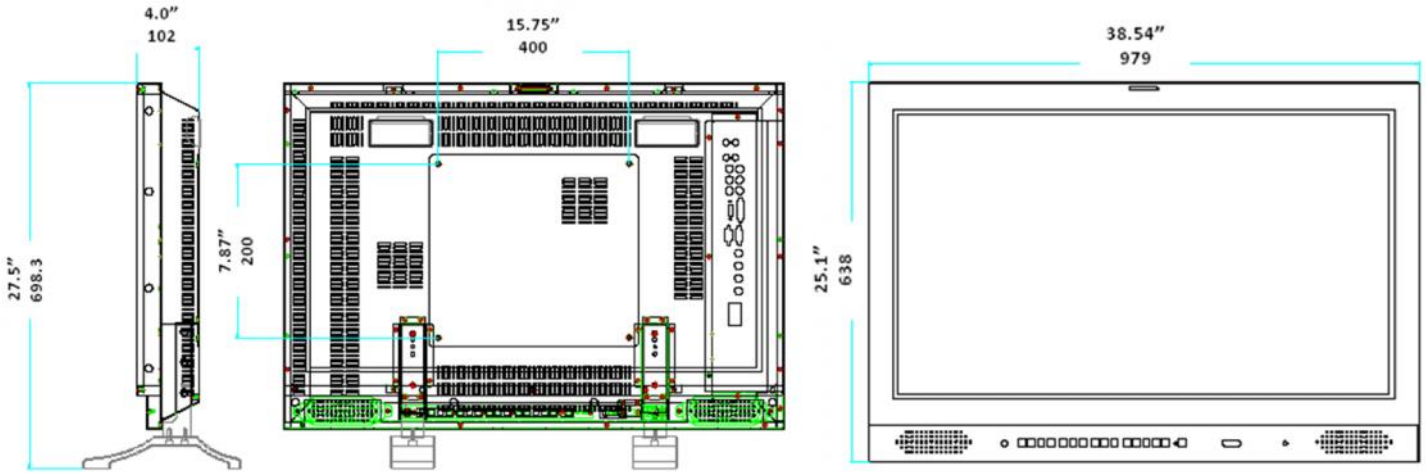
17-4. PBM-224S



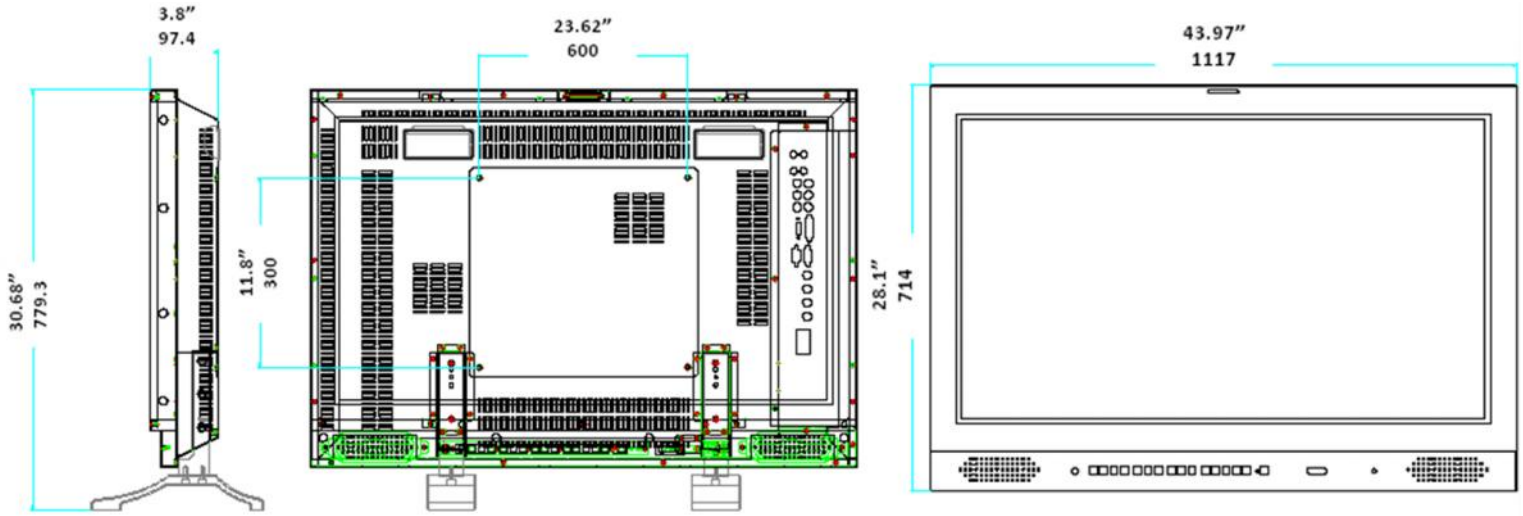
17-5. PBM-232S



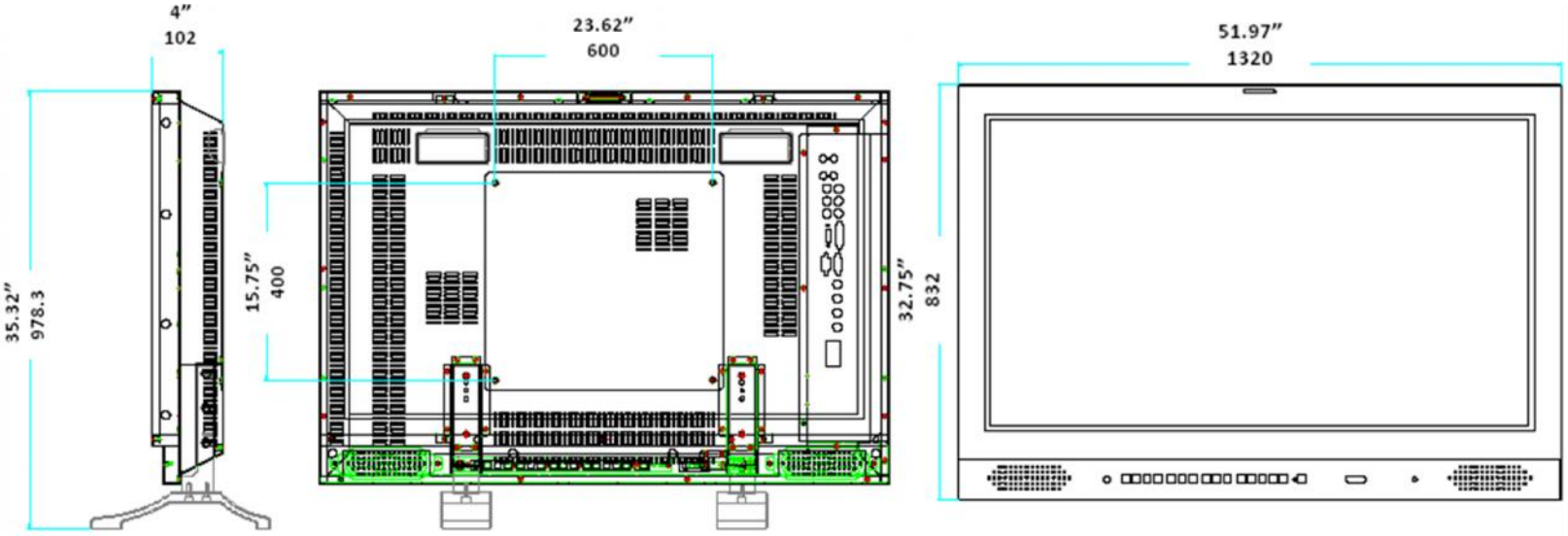
17-6. PBM-240S



17-7. PBM-246S



17-8. PBM-255S



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